MX5 Reference Guide

(For Microsoft® Windows® Pocket PC® Equipped MX5's)

IMPORTANT NOTICE

LXE's MX5 running Pocket PC 2000/2002 is obsolete.

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E-EQ-MX5PCRG-F-ARC

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Li-Ion Battery

When disposing of the MX5 Main Battery, the following precautions should be observed:

The battery should be disposed of properly. The battery should not be disassembled or crushed. The battery should not be heated above 212°F (100°C) or incinerated.

Note: The original equipment's User Manuals are copyrighted by Itronix® Corporation. This manual has been amended by LXE® Inc., for the MX5 and Cradles with Itronix's express permission.

Initial Release, June 2003

Revision Notice

MX5 Reference Guide
Upgrade From Revision D to Revision E

E	Front Page of Guide	Added new LXE logo.
E	Chapter 1 - Introduction	Added “Important Battery Information”. Added “Identify Your Device”. Clarified battery pack insert/replace process. Corrected flash part number in Accessories. Changed MIL STD to 810F in “Environmental Specifications”. Changed IP65 to IP67.
E	Chapter 2 – Physical Description and Layout	Updated “Cradles”.
E	Chapter 3 – System Configuration	Added System menu option “Administrator” (AppLock).
E	Chapter 4 – AppLock	Added.
E	Appendix C –System Configuration – Pocket PC 2000	Added.
F	Entire Manual	**(Dec 2005) MX5 running Windows Pocket PC 2000/2002 is obsolete as of March 2005. Manuals are Archived to the LXE ServicePass website. Replacement mobile device is the MX5 CE .NET mobile device.**

February 2005

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Chapter 1 Introduction

Overview

Note: LXE's MX5 running Microsoft Windows Pocket PC 2000 or Pocket PC 2002 is obsolete. The replacement mobile device for this product is the MX5 running Windows CE .NET.

The LXE® MX5 is a rugged, portable, hand-held computer that uses Microsoft® Windows® for Pocket PC 2000 or Pocket PC 2002 software. The MX5 can transmit information using a 2.4 GHz radio (with an internally mounted antenna) and it can store information for later transmission through an RS-232, InfraRed or communication port.

The mobile device is vertically oriented and features backlighting for the display and the keypad. The touch-screen display supports graphic features and icons that the Pocket PC operating system supports. It can be scaled from a limited function batch computer to an integrated RF scanning computer. It is powered by a 2800 mAh Lithium-Ion main battery pack and an internal backup battery. A stylus is attached to the MX5 to assist in entering data and configuring the unit.

Important Battery Information

Important: If the main battery has been out of the MX5 for an extended period of time or becomes fully discharged or dead, a fully charged backup battery will last for up to 24 hours. If this happens, the device will cold reset the next time power is applied from either AC power or a charged main battery. A cold reset will cause loss of data and custom programs. Always store unused MX5's with a fully charged main battery pack installed. The MX5 requires periodic connection to an external power source to maintain an optimum backup battery charged status.

- Until the main battery and backup battery are completely depleted, the MX5 is always drawing power from the batteries (On).
- New batteries must be fully charged prior to use.
- Whenever possible, use the AC power adapter with the MX5 to conserve the main battery and charge the backup battery.
- When a new battery is installed in the MX5 for the first time (or when the backup battery is completely depleted), the Time and Date reverts to it's default values.

Important

If the mobile device has AppLock installed, please refer to "Chapter 4 – AppLock" for setup and processing information before continuing.

When to Use This Guide

As the reference for LXE's MX5 computer, this guide provides detailed information on its features and functionality. Use this reference guide as you would any other source book -- reading portions to learn about the MX5, and then referring to it when you need more information about a particular subject. This guide takes you through all aspects of installation and configuration for the LXE MX5.

Operating and safety instructions for the general user are contained in the "MX5 User's Guide."

This chapter, **"Introduction",** describes this reference guide's structure, contains initial setup instruction, briefly describes data entry processes, and explains how to get help.

Chapter 2 "Physical Description and Layout", describes the function and layout of the MX5, controls and connectors. Also describes the power supplies and docking options for the MX5.

Chapter 3 "System Configuration" takes you through the *Pocket PC 2002* operating system setup and the MX5 file structure.

Chapter 4 "AppLock" describes the LXE Application Locking software.

Appendix A "Key Maps" describes the keypress sequences for the keypad.

Appendix B "Technical Specifications" lists MX5 technical specifications.

Appendix C "System Configuration – Pocket PC 2000" takes you through the *Pocket PC 2000* operating system setup and the MX5 file structure.

Pocket PC Versions

Access: the Windows icon | Settings | System tab | Handheld | Versions tab

The MX5 may be running either Pocket PC 2000 or Pocket PC 2002. This guide highlights the differences in this way:

Pocket PC 2000 - The menu path or command syntax for Windows Pocket PC 2000 units only. System configuration information is contained in Appendix C "System Configuration - Pocket PC 2000".

Pocket PC 2002 - The menu path or command syntax for Windows Pocket PC 2002. System configuration information is contained in Chapter 3 "System Configuration".

Throughout the rest of the guide, if there is no distinction between Pocket PC 2000 and Pocket PC 2002, the instruction or information is the same for both versions.

Note: LXE's MX5 running Microsoft Windows Pocket PC 2000 or Pocket PC 2002 is obsolete. The replacement mobile device for this product is the MX5 running Windows CE .NET.

Identify Your Device

At the front bottom of the MX5 is a label indicating the operating system resident on the mobile device. This document is one in a series covering the MX5 family of computers:

Label – Pocket PC

For MX5 computers equipped with Microsoft Windows Pocket PC 2000 or Pocket PC 2002 operating Systems:

MX5 User's Guide
MX5 Reference Guide
LXEbook -- MX5 User's Guide (can be downloaded to the MX5 Pocket PC device from the LXE Manuals CD.)

Label – Windows CE. NET

For MX5 computers equipped with Microsoft Windows CE .NET operating System:

MX5 CE .NET User's Guide
MX5 CE .NET Reference Guide
LXEbook -- MX5 CE. NET User's Guide (can be downloaded to the MX5 CE. NET device from the LXE Manuals CD.)

Label – I-SAFE

For MX5 Intrinsically Safe (MX5-IS) computers equipped with Microsoft Windows CE .NET operating System:

MX5 Intrinsically Safe User's Guide
MX5 CE .NET Reference Guide
LXEbook -- MX5 I-Safe User's Guide (can be downloaded to the MX5-IS device from the LXE Manuals CD.)

The MX5 Intrinsically Safe Hazardous Location unit (MX5-IS) is distinguished from the standard MX5 by the blue keypad overlay and the safety approval labeling on the back of the MX5-IS. Please refer to the "MX5 Intrinsically Safe User's Guide" for cautions, warnings, explanation and instruction when using the MX5-IS device.

The following guides are interchangeable for MX5 computers (except where noted in the manuals):

- MX5 Cradle Reference Guide
- MX5 Multi-charger Reference Guide
- MX5 Belt Battery System
  LXE suggests using this accessory specifically with a Low Temperature MX5 *in a non-hazardous location.*

Document Conventions

ALL CAPS	All caps are used to represent disk directories, file names, and application names.
Menu | Choice	Rather than use the phrase "choose the Save command from the File menu", this manual uses the convention "choose File | Save".
"Quotes"	Indicates the title of a book, chapter or a section within a chapter (for example, "Document Conventions").
< >	Indicates a key on the keypad (for example, <Enter>).
	Indicates a reference to other documentation.
ATTENTION	Keyword that indicates vital or pivotal information to follow.
	Attention symbol that indicates vital or pivotal information to follow. Also, when marked on product, means to refer to the manual or operator's guide.
	International fuse replacement symbol. When marked on the product, the label includes fuse ratings in volts (v) and amperes (a) for the product.
Note:	Keyword that indicates immediately relevant information.
CAUTION	Keyword that indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
WARNING	Keyword that indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
DANGER	Keyword that indicates a imminent hazardous situation which, if not avoided, will result in death or serious injury.

Components

Figure 1-1 Front of MX5

1	Scanner Housing	4	Keypad
2	Microphone	5	Power Key
3	Touch Screen Display	6	Speaker

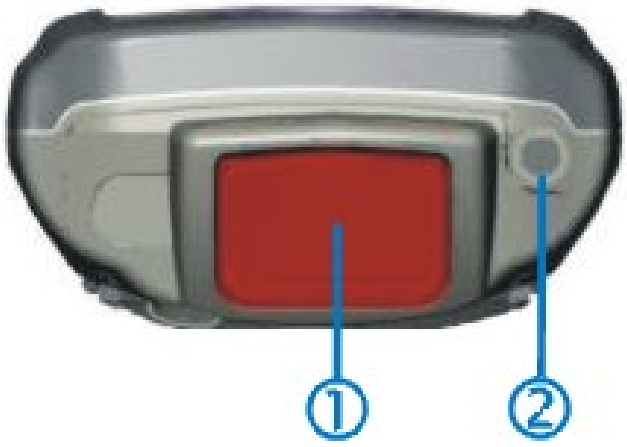


Figure 1-2 Scan Aperture and Audio Jack

1	Scan Aperture	2	Audio Jack

Figure 1-3 Ports

1	COM 1 -- RS-232, USB and AC Power Connection	3	COM 4 -- RS-232 and AC Power Connection
2	COM 3 -- IR Port		

Figure 1-4 Back of MX5 w/Optional Handle

1	Scanner	4	Trigger
2	Stylus and Stylus Pocket	5	Battery Fastener
3	Trigger Handle	6	Main Battery

Figure 1-5 Handle (Optional)

1	Scan Aperture	3	Handle
2	Trigger		

Getting Started

Note: When your MX5 is pre-configured, the radio, flash card and scanner are programmed by LXE to your specifications.

This section's instructions are based on the assumption that your new system is pre-configured and requires only accessory installation (e.g. handstrap) and a power source. LXE recommends that installation or removal of accessories be performed on a clean, well-lit surface. When necessary, protect the work surface, MX5, and components from electrostatic discharge.

Use this guide as you would any other source book -- reading portions to learn about the MX5, and then referring to it when you need more information about a particular subject. This guide takes you through an introduction to and operation of the LXE MX5.

In general, the sequence of events is:

1. Insert a fully charged battery and press the Power key. [1]
2. Connect an external power source to the unit (if required).
3. Calibrate the touch screen.
4. Set the geographical Location. Set the date and time.
5. After all files are loaded and the Desktop is displayed, adjust audio volume and other parameters if desired.
6. Set up radio and network data, if necessary. See Chapter 3 "System Configuration."
7. Tap the Windows icon | **Programs | File Explorer | My Documents | My Device | Compact Flash** then tap the RegSave file.

If you need to set up the integrated scanner **barcode reading parameters**, please refer to the "**Integrated Scanner Programming Guide**" on the LXE Manuals CD or the LXE website www.lxe.com.

Note: The sequence of steps in "Getting Started" must be also be completed when the MX5 returns from a Cold Boot and when a new OS version is loaded. The radio, flash card, virtual keyboard and scanner parameters may also need to be reset after a cold boot.

[1] If the MX5 has a dead main battery and is as cold as the extended operating temperature's lowest value, the unit must be warmed to above –20°C (-4°F) before installing a new main battery pack and pressing the On button.

Saving Settings

When returning from a Cold Reset the previous registry savings are reloaded.

If you want to save the registry without having to reboot the MX5:

- Tap the Windows icon | **Programs | File Explorer | My Documents | My Device | Compact Flash** folder then tap the `RegSave` file.

The registry save process takes 5 – 10 seconds. The `RegSave` utility creates the `RegTemp.reg` registry backup file.

The registry is reloaded from the `RegTemp.reg` file after a Cold Reset. When returning from a Cold Reset, you are given the option to Warm Reset and invoke registry settings.

Power Key

Note: Refer to the section titled "Power Modes" later in this manual for information relating to the power states of the MX5.

Figure 1-6 Power Key Location

The Power key is located next to the <Z> key on the keypad. When a battery is inserted in the MX5 for the first time press the Power key.

Tapping the Power key places the MX5 immediately in Suspend mode. Tapping the Power key again, or connecting to AC power, immediately returns the MX5 from Suspend.

Please refer to the section titled "Power Modes" later in this manual for a list of the kinds of activities that will return the MX5 from Suspend Mode.

Please refer to the section titled “Power Key” in Chapter 2 for Reboot options and instruction.

Insert Main Battery

The Battery Compartment is located at the bottom of the back of the computer. The fasteners in the main battery Pack are connected to the Battery Pack. Press the Power key after the battery is inserted into the MX5 [2].

Note: On first use the battery pack should be charged with an external power source (i.e. AC Adapter) – 3 hours for the main battery and 7 hours for the backup battery. New main battery packs alone must be charged prior to first use -- this process takes up to four hours in an LXE Multi-Charger.

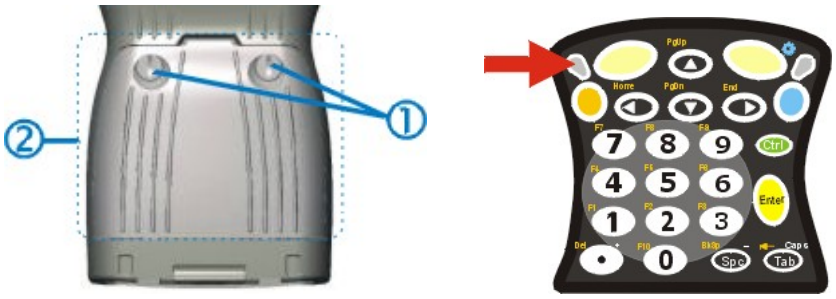


Figure 1-7 Main Battery Pack and Battery Charging LED

1 Battery Pack Fasteners 2 Battery Pack

Note: Using the battery removal tool (or a coin) twist each fastener to the left to loosen the battery pack. Twist the fastener to the right to tighten the battery pack.

Place the battery in the battery well, making sure the tabs on the bottom of the battery pack fit into the slots at the bottom end of the battery well. Push the battery down into the battery well while fastening the screws.

Fasten the screws tight enough to allow the rubber gasket to create a watertight seal. If the screws do not easily twist into the threaded opening, remove the battery pack and repeat the process.

When the main battery pack is charging, the Battery Charge LED flashes green. The backup battery is trickle-charged by the main battery. There is no backup battery charging indicator.

Whenever possible, use the AC power adapter with the MX5 to conserve the main battery and charge the backup battery.

[2] If the MX5 has a dead main battery and is as cold as the extended operating temperature's lowest value, the unit must be warmed to above –20°C (-4°F) before installing a new main battery pack and pressing the On button.

About Lithium-Ion Batteries

Li-Ion batteries (like all batteries) gradually lose their capacity over time (in a linear fashion) and never just stop working. This is important to remember -- the MX5 is always 'on' even when in the Suspend state and draws battery power at all times. Tap the Windows icon **| Settings | System | Handheld | Battery Info** tab to check the battery status and power reading.

The following chart is an approximation. Actual battery capacity will vary based on usage, ambient temperature and peripherals drawing power from the MX5:

100% capacity	2800 mAh minimum
80% capacity	2240 mAh minimum

Deciding when to put a fully charged Main Battery pack in the MX5 is difficult to quantify because it is very application specific. 1000 mAh may be the cutoff for one customer who uses the computer frequently, while 500 mAh may be perfectly fine for a customer who occasionally uses the computer. You need to determine the point at which battery life becomes unacceptable for your business practices and replace the Main Battery pack before that point.

Connect External Power Supply (Optional)

The MX5 receives AC/DC power from the AC/DC 12V Power Supply or the MX5 Cradle.

The MX5 DC power connection is located at the base of the MX5. The cradle power jack is located on the back of the cradle.

The A/C power cable is not included with the Power Supply, please contact your LXE representative for replacement power cables. When the power cable is connected to a wall outlet and the Power Supply, the ON indicator on the Power Supply illuminates green.

Figure 1-8 AC/DC 12V External Power Supply

1. Squeeze the sides of the power connector and push the power cable connector into either MX5 port. The click means the connector is seated firmly.

2. The CHGR LED above the keypad illuminates when the MX5 is receiving external power through the power jack. The Main Battery recharges when the MX5 is connected to an external power source.

Note: When the MX5 is receiving power through a cradle connected to external power the MX5's CHGR LED is illuminated.

When the MX5 is connected to an external power supply, and the Main Battery pack is charging, the Battery Charge LED flashes green.

Figure 1-9 Battery Charging LED

Install Pistol Grip Handle (Optional)

The MX5 can be purchased with a customer-installable pistol grip handle. The handle enables the user of the MX5 to hold the unit while pointing and activating the scanner with one hand. Pressing the trigger activates the scanner and functions the same as the Scan key on the keypad. With the handle installed the Scan key on the keypad remains active. The trigger duplicates the operation.

The handle is built of a durable and flexible plastic that will not detach from the MX5 if the unit is dropped.

The trigger handle is a mechanical device. Battery or external A/C power is not required for operation of the trigger handle. The trigger handle does not need to be removed when replacing the Main Battery pack.

Either the trigger handle is attached to the MX5 or the handstrap is attached, not both.

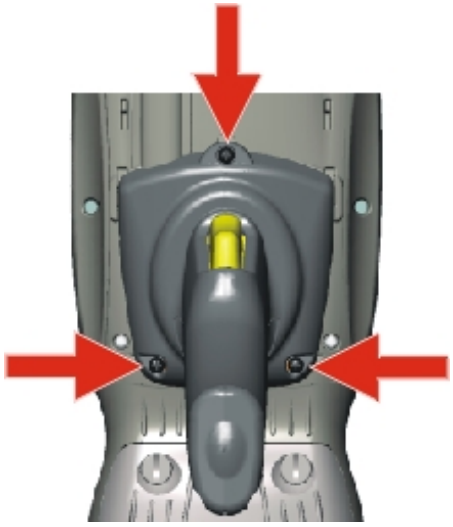


Figure 1-10 Trigger Handle Attach Points

Handle Installation

1. Place the MX5, with the screen facing down, on a flat stable surface.
2. Slip the L-shaped plastic hooks, at the top of the handle, into the slots on each side of the back of the MX5 and slide the handle downward until the screw holes are visible.
3. Attach the pistol grip handle to the MX5 (as shown above) with the set of three screws and washers provided.
4. Test the handle's connection making sure the MX5 is securely connected.

Periodically check the pistol grip handle for wear and the connection for tightness. If the handle gets worn or damaged, it must be replaced.

Install Handstrap

Note: The handstrap cannot be used/installed when the MX5 has the trigger handle installed at the same time.

An elastic hand strap is available for the MX5. Once installed, the hand strap provides a means for the user to secure the computer to their hand. It is adjustable to fit practically any size hand and is easily moved to allow installation or removal of the MX5 battery pack.

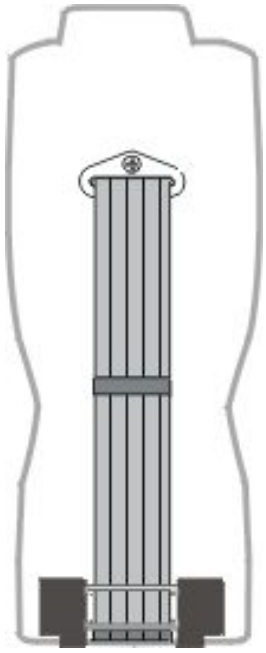


Figure 1-11 MX5 With Handstrap Installed

Installation

1. If a handle is installed, remove it at this time. See section “Install Pistol Grip Handle.”
2. Slip the strap through the upper bracket prior to securing the upper bracket to the unit.

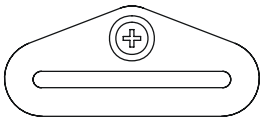


Figure 1-12 Upper Strap Bracket

3. When slipping the strap through the bracket make sure the closed loop fastener surface is up.
4. After slipping the strap through the bracket, fold the strap over so that the two closed loop fastener surfaces mate evenly.

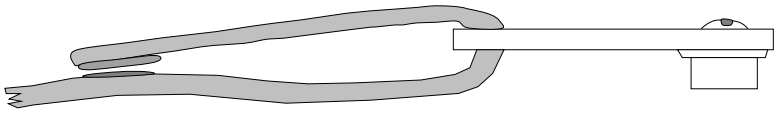


Figure 1-13 Strap Inserted in Upper Bracket

5. Prior to securing the upper bracket to the unit, slide the bottom assembly into the slots at the bottom of the MX5. Insure that both ends of the bottom assembly are securely installed.
6. After securing the bottom of the strap to the MX5, loosen the closed loop fastener strap and then secure the upper bracket to the unit with a screw.

Removal

1. Separate the closed loop fastener tabs and loosen the strap through the upper bracket.
2. Using a Phillips screwdriver, remove the upper bracket screw.
3. Pull the bottom assembly from the slots in the bottom back of the MX5..

Slide the bottom bracket out and away from the MX5 when replacing the Main Battery Pack.

Periodically check the handstrap for wear and the connection for tightness. If the handstrap gets worn or damaged, it must be replaced.

Tap the Touchscreen with a Stylus

Note: Always use the point of the stylus for tapping or making strokes on the display. Never use an actual pen, pencil or sharp object to write on the touch screen.

Hold the stylus as if it were a pen or pencil. Touch an element on the screen with the tip of the stylus then remove the stylus from the screen. Firmly press the stylus into the stylus holder on the MX5 when the stylus is not in use.

Like using a mouse to left-click icons on a computer screen, using the stylus to tap icons on the MX5 display is the basic action that can:

- Open applications
- Choose menu commands
- Select options in dialog boxes or drop-down boxes
- Drag the slider in a scroll bar
- Select text by dragging the stylus across the text
- Place the cursor in a text box prior to typing in data or retrieving data using the integrated barcode scanner or an input/output device connected to the serial port.

An extra or replacement stylus can be ordered from LXE. See the section titled "Accessories" for the stylus part number.

Keypad Shortcuts

Use keyboard shortcuts instead of the stylus when the MX5 is running Pocket PC.

- Press Tab and a Left or Right Arrow key to select a file.
- Press Shift and an Up or Down Arrow key to select several files. Press Shift+Arrow, then Shift+Arrow again for each additional file selected.
- Once you've selected a file, press Alt then press Enter to open its Properties dialog.
- Press Orange then press numeric dot to delete the currently highlighted file(name). Or, tap and hold the stylus on the filename and a menu box with a Delete option appears.

Touch Screen Calibration

Note: The first time it is used, the MX5 automatically runs the touch screen calibration program, the Location dialog and the Owner Information dialog.

If the MX5 is not responding properly to pen touch taps, you may need to recalibrate your screen. Recalibration involves tapping the center of a target. If you miss the center, keep the stylus on the screen, slide it over the target's center, and then lift the stylus.

Pocket PC 2000 To recalibrate the screen, tap the Windows Icon | **Settings | System tab | Align Screen icon**. To start, tap the Align Screen button with the stylus.

Pocket PC 2002 To recalibrate the screen, tap the Windows Icon | **Settings | System tab | Screen icon**. To start, tap the Align Screen button with the stylus.

Follow the instructions on the screen and press the Enter key (or tap the OK icon) to save the new calibration settings. You can also press the <Esc> key sequence to cancel or quit.

Set Geographic Location (Optional)

The first time it is used, the MX5 automatically runs the touch screen calibration program and the Location dialog. The program also runs after a Cold Boot or when the Main Battery and backup battery had been completely drained.

To set Location, tap the Windows Icon | **Settings | System tab | Clock icon**.

Following the instructions on the screen, select a home town. The time zone should set automatically to your selected geographic location.

Adjust the time and calendar date and tap OK when you are finished.

Select Yes to save the location, No to return to the program, or Cancel to ignore any changes.

Enter Owner Information (Optional)

Note: The first time it is used, the MX5 automatically runs the touch screen calibration program and the Location dialog.

To set Owner information, tap the Windows Icon | **Settings | Personal tab | Owner Information icon**.

Using the virtual keyboard, or the keys on the keypad, enter the Owner Information. Tap OK when finished.

Toggle the Display and Keypad Backlight On and Off

To toggle the Display and Keypad backlights on and off, locate the Blue key at the top of the keypad.

Toggle both backlights by pressing the Blue key, then the Right Scan key to toggle the Backlight.

Both backlights can be toggled if the keypad backlight is enabled in Windows icon | **Settings | System | Backlight** icon.

Increase or Decrease Backlight Intensity

When the backlight is on, press the Orange key and the < 7 > key to decrease the intensity of the backlight. Repeating this keypress sequence continues to decrease the intensity of the backlight until the backlight is Off.

Once the backlight is off, use the Blue key and the Right Scan button keypress to toggle the backlight on. This process returns the backlight to it's brightest intensity.

Set the Display Backlight Timer

Note: Refer to the section titled "Power Modes" later in this manual for information relating to the power states of the MX5.

Tap the Windows icon | **Settings** | **System** | **Backlight icon**. Select an option and tap OK to save the changes.

Backlight time-out always allowed

Backlight times out whether or not there is keypad or stylus activity. The blue key and the right scan key sequence toggles the backlights on and off before and after time-out expires. A key sequence toggle or Suspend / Resume cycle is the only way to turn the backlights back on after a time-out.

Backlight time-out when no keyboard/pen activity

Backlight times out when there is no keypad or stylus activity. The blue key and the right scan key sequence toggles the backlights on and off before and after time-out expires. A key sequence toggle or Suspend / Resume cycle is the only way to turn the backlights back on after a time-out.

Backlight time-out when no keyboard/pen activity and resume on activity.

Backlight times out when there is no keypad or stylus activity. The blue key and the right scan key sequence toggles the backlights on and off before and after time-out expires. A keypress, stylus tap, key sequence toggle or Suspend / Resume cycle will all turn the backlights on after a time-out.

Keypad backlight enable/disable

When set to enable, the keypad backlight turns on and off in tandem with the display backlight. When set to disable, the keypad backlight is always off.

The default value is 2 seconds for battery and AC power. The backlight will remain on all the time when the backlight time-out is set to “Disabled.”

Set the Power Off Timer

Note: Refer to the section titled "Power Modes" later in this manual for information relating to the power states of the MX5.

Tap the Windows icon | **Settings** | **System** | **Handheld Settings** icon. Then select the **Power** tab.

On battery power:

Turn off device if not used for . . . (can be set from 1 minute to 5 minutes)

Change the parameter value and tap OK to save the change.

The default is 3 minutes. When the MX5 is connected to A/C power, the device does not go into Suspend Mode.

Note: When the Power Off timer expires, the computer enters Suspend Mode (when not connected by A/C power).

Connect Audio Jack (Optional)

The MX5 audio jack is located on the top of the unit next to the scan aperture. The internal speaker is disabled when the audio jack is connected.

Figure 1-14 Connect Audio Jack

Insert the barrel end of the connector into the MX5 audio jack and push in firmly.

Note: The audio option draws power from the Main Battery Pack.

Set The Audio Speaker Volume

Note: An application may override the control of the speaker volume. Turning off sounds saves power and prolongs battery life.

The audio volume can be adjusted to a comfortable level for the user. The MX5 has an internal speaker and a jack for an external headset.

Using the Keypad

Note: Sounds & Reminders (Windows icon | Settings | Personal tab | Sounds & Reminders[Pocket PC 2000] | Sounds & Notifications [Pocket PC 2002]) must have the options below "Enable sounds for" enabled before the following key sequences will adjust the volume.

To adjust speaker volume, locate the <V> key and the Blue key.

Adjust the speaker volume by pressing the:

- Blue key, then the <V> key to enter Volume change mode.
- Use the Up Arrow and Down Arrow keys to adjust volume until the speaker volume is satisfactory.
- Press the Enter key to exit this mode.

Using the Touch Screen

Pocket PC 2000 Tap the Windows icon | **Settings | Personal tab | Sounds & Reminders** icon**.** Then select the Volume tab.

Pocket PC 2002 Tap the Windows icon | **Settings | Personal tab | Sounds & Notifications** icon**.** Then select the Notifications tab.

Change the volume setting and tap OK to save the change. You can also select / deselect sounds for key clicks and screen taps and whether each is loud or soft. As the volume scrollbar is moved between Loud and Silent, the computer beeps each time the volume increases or decreases in decibel range.

Sounds specific to primary events are selected using the options on the Sounds tab.

Reminder tones are selected using the options on the Reminders tab.

Enter Data

You can enter data into the MX5 through several different methods. The Scanner aperture provides barcode data entry, the RS-232 or the IR port are used to input/output data, and the keypad provides manual entry.

MX5's with a touch screen and Microsoft Pocket PC software can use a stylus to input data, the COM ports and/or the keypad. A virtual keyboard is available in applications that expect keyed input.

Keypad Entry

The keypad is used to manually input data that is not collected otherwise. Almost any function that a full sized computer keyboard can provide is duplicated on the MX5 keypad but it may take a few more keystrokes to accomplish a keyed task.

Almost every key has two or three different functions. The primary alpha or numeric character is printed on the key.

The Orange or Blue keys are pressed when you want to use a 2nd key function. For example, when you press a Blue or Orange key (the 2nd key), then press the key that has the desired second-function key. The specific 2nd character is printed above the corresponding key in either Orange or Blue.

Please refer to "Appendix A - Key Maps" for instruction on the specific keypresses to access all keypad functions.

Stylus Data Entry

Note: Always use the point of the stylus for tapping or making strokes on the display. Never use an actual pen, pencil or sharp object to write on the touch screen.

The stylus performs the same function as the mouse that is used to point to and click elements on a desk top computer. The stylus is used in the same manner as a mouse – single tap or double tap to select menu options, drag the stylus across text to select, hold the stylus down to activate slider bars, etcetera.

Hold the stylus as if it were a pen or pencil. Touch an element on the screen with the tip of the stylus then remove the stylus from the screen. The touch screen responds to an actuation force (touch) of 4 oz. (or greater) of pressure.

The stylus can be used in conjunction with the keyboard, integrated scanner and an input/output device connected to one of the MX5's serial ports.

- Touch the stylus to the field of the data entry form to receive the next data feed.
- The cursor begins to flash in the field.
- The unit is ready to accept data from either the physical keypad, virtual keyboard, integrated scanner or a scanner connected to the serial port on the cradle, if the scanner applet is configured correctly.

Scanner Entry

Read all cautions, warnings and labels **before** using the laser scanner.

To scan with the laser barcode reader, point the laser window towards a barcode and press the Scan button. You will see a red laser beam strike the barcode.

Figure 1-15 Scan Beam

Align the red beam so that the barcode is centered within the beam. The laser beam must cross the entire barcode. Move the MX5 towards or away from the barcode so that the barcode takes up approximately two-thirds the width of the beam.

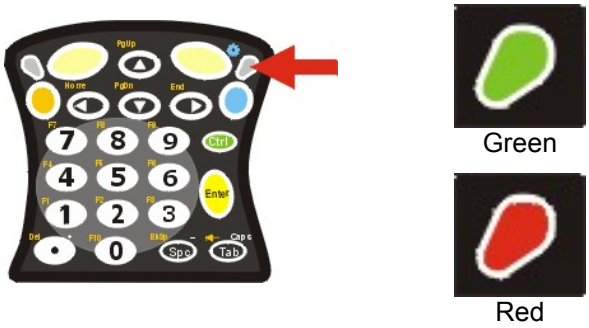


Figure 1-16 Scanner LED Location

The Scanner Active LED turns red when the laser beam is on. Following a barcode scan and read the Scanner Active LED turns green for two seconds and the MX5 beeps, indicating a successful scan. The laser and Scanner Active LED automatically turn off after a successful or unsuccessful read. The scanner is ready to scan again after the Scan key is released, or after the green LED turns off following a successful scan.

Voice Recording

In Calendar, Tasks, and Contacts, you can include a recording in the Notes tab. In the Notes program, you can either create a stand-alone recording, or include a recording in a written note.

Record a voice message within **Notes**.

1. From the Start menu select Notes.
2. Tap the Cassette icon.
3. Tap the red Record button.
4. Begin speaking.
5. End the recording session by tapping the square on the recording menu.
6. Play your recording by tapping on the speaker icon.

Virtual Keyboard

The virtual keyboard is always available. Tap the keyboard icon at the bottom of the screen to put the virtual keyboard on the display. Using the stylus:

- Tap the 123 key to display either an alphanumeric keyboard or a numeric keyboard with characters usually accessed by capitalizing alphanumeric keys on a physical keyboard.
- Tap the Shift key to type one capital letter.
- Tap the CAPS key to type all capital letters.
- Tap the au key to access symbols.

Figure 1-17 Virtual Keyboard

RS-232 Data Entry

The MX5 accepts input from an RS-232 device connected to either RS-232 port.

Note: ActiveSync will not transfer files over the RS-232 connector on the MX5 cradle IF the scanner applet is configured for COM 1 External.

Getting Help

All LXE manuals are now available on one CD and they can also be viewed/downloaded from the LXE website. Contact your LXE representative to obtain the LXE Manuals CD.

You can also get help from LXE by calling the telephone numbers listed on the LXE Manuals CD, in the file titled "Contacting LXE". This information is also available on the LXE website www.lxe.com.

Explanations of terms and acronyms used in this manual are located in the file titled "LXE Technical Glossary" on the LXE Manuals CD.

Manuals

MX5 User's Guide
MX5 Cradle Reference Guide
MX5 Multi-Charger Operator's Guide
LXEbook -- MX5 User's Guide (can be downloaded to the MX5 Pocket PC device from the LXE Manuals CD.)

Accessories

PCMCIA Cards	
PCMCIA Compact Flash Adapter	9000A106PCCCFADPTR
Holding Accessories	
Strap, Hand, Nylon	MX5A401HANDSTRAP
Handle, w/wrist strap	MX5A406HANDLE
Case and strap, nonhandle MX5	MX5A402CASE1
Case and strap, handle MX5	MX5A403CASE2
Holster, nonhandle MX5	MX5A404HOLSTER1
Holster, handle MX5	MX5A405HOLSTER2
Belt, Heater Battery, MX5	MX5A382HTRBATTBELT
Charger, Heater Battery Belt, MX5	MX5A383BATTBELTCHGR
Cable, Heater Battery Belt to MX5 D26	MX5A053CBLBATTBELT
Miscellaneous	
Stylus, Tethered	9000A507STYLUS
Stylus, 6 Pack Replacement, MX5	MX5A501STYLUS
Headset with microphone	MX5A502HEADSET
Battery Chargers and Battery	
6 Unit Charger w/ US Power Cable	MX5A385CHGR6US
6 Unit Charger w/o US Power Cable	MX5A385CHGR6WW
Battery, Li-Ion	MX5A379BATT

Cradles and Power Supplies	
Vehicle Mount Cradle (Power Adapter Required)	MX5A001VMCRADLE
Standard Desktop Cradle	MX5A002DESKCRADLE
Enhanced Desktop Cradle	MX5A003EDESKCRADLE
Power Supply, AC/DC w/ US Power Cable	MX5A305PSACUS
Power Supply AC/DC w/o Power Cable	MX5A305PSACWW
Power Supply, 12V, Bare Wire I, MX5 O	MX5A306PS12V
Power Supply, 12V Auto to VM Cradle	MX5A380PSAUTO12VUS
Power Supply, 12V Auto to VM Cradle (EU)	MX5381PDAUTO12VWW
Power Supply, 24V-72V, Bare Wire I, MX5 O	9000A316PS24V72VMX5
Cables for Cradle and MX5 Serial Ports	
Cable, MX5 to PC RS-232, D26 to DA9F	MX5A051CBLD26DA9F
Cable, MX5 to PC USB, D26 to USB	MX5A052CBLD26USB
Cable, MX5 for *Powerscan,* 3", D26 to DA9M	MX5A055CBL3IND26D9M
-Scanner, *Powerscan*, SR, 8' Cbl	8300A326SCNRPWRSR8DA9F
-Scanner, *Powerscan*, SR, 12' Cbl	8300A327SCNRPWRSR12DA9F
-Scanner, *Powerscan*, LR, 8' Cbl	8310A326SCNRPWRLR8DA9F
-Scanner, *Powerscan*, LR, 12' Cbl	8310A327SCNRPWRLR12DA9F
-Scanner, *Powerscan*, XLR, 8' Cbl	8320A326SCNRPWRXLR8DA9F
-Scanner, *Powerscan*, XLR, 12' Cbl	8320A327SCNRPWRXLR12DA9F

Chapter 2 Physical Description and Layout

Hardware Configuration

System Hardware

The MX5 hardware configuration is shown in the following figure.

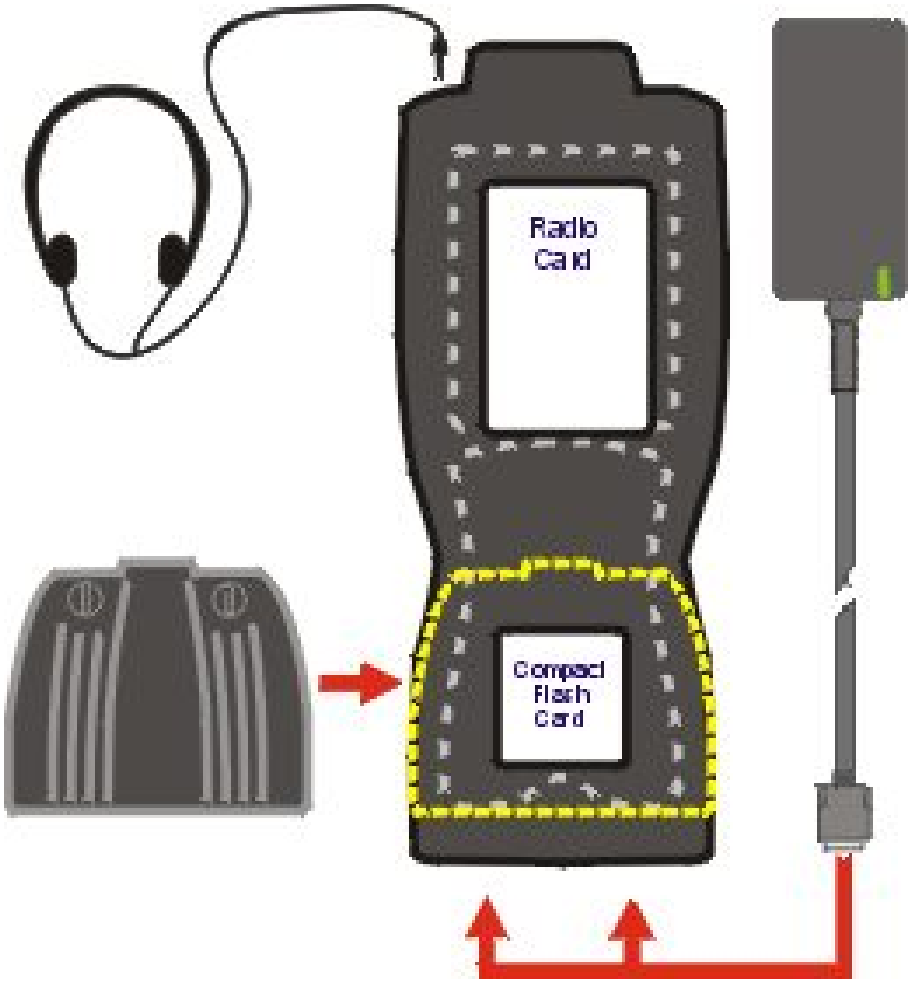


Figure 2-1 System Hardware

Central Processing Unit

The LXE MX5 CPU is a SA-1110 running at 206 MHz. The operating system is Microsoft Pocket PC 2000 or Microsoft Pocket PC 2002 resident in flash memory.

Core Logic

The MX5 supports the following I/O components of the core logic:

- One PCMCIA slot (supports Type II PCMCIA cards).
- One compact Flash card slot (supports Type I and II cards) in the rear hatch.
- One ATA compact Flash card slot under the Main Battery pack.
- One InfraRed port.
- Two serial ports.
- One Digitizer Input port (Touch screen).

Note: As the MX5 does not have PC Card Management software installed, LXE recommends purchasing pre-formatted cards.

System Memory

On-board 32MB Flash contains the Pocket PC operating system, hardware-specific OEM Adaptation Layer, device drivers, standard Pocket PC applications and utilities. The operating system supports MFC, ATL and Visual Basic programming languages, TCP/IP and PPP network protocols. The Flash is configured as the primary boot device.

The computer has one Type I/II CF slot and one ATA CF slot. The MX5 supports and auto detects up to 256MB of Type I compact flash memory.

Video Subsystem

The touch screen is a 3/8" (9.65cm) ¼ VGA 320 by 240 pixel TFT Reflective Active Color LCD. Backlighting is available, can be turned on and off with key sequences. The turn-off timing is configured through the Windows icon | **Settings | System | Backlight** icon. The display controller supports Microsoft Pocket PC graphics modes.

Touch screen allows mouse functions (pointing and tapping on the display or Signature Capture) using an LXE approved stylus.

The color display is optimized for outdoor use but may also be used indoors. The color display has a CCFL (Cold-Cathode Fluorescent Lighting) front light.

The transflective display appears to have a greenish hue when the unit is in Suspend.

Power Supply

The LXE MX5 uses two batteries for operation.

- A replaceable Lithium-Ion (Li-Ion) 2800mAh battery pack. The battery pack recharges while in the MX5 with the computer in a powered cradle or with the optional external power source attached. The main battery pack can be removed from the MX5 and inserted in the MX5 Multi-Charger which simultaneously charges up to six battery packs in four hours.
- An internal 450 mAh Nickel Metal Hydride (NiMH) backup battery. The backup battery is recharged directly by the main battery when it is installed. Full charging of the backup battery will take seven hours. The recharging of the backup battery is automatically controlled by the MX5. The backup battery must be replaced by qualified service personnel.

An AC adapter accessory is available.

COM Ports

The MX5 has two mini D serial ports that are configurable using the **Settings** | **Handheld** | **Comms** tab:

Port 1 (left) COM 1	Port 2 (right) COM 4
USB	RS-232
RS-232	AC Power
AC Power	
COM 3 is always the IR port.	
ActiveSync	

Power to the COM ports may be turned on and off.

Note: ActiveSync is not configurable to work on COM 4. IR ActiveSync application is available.

Audio Interface

An interface is available for headset/microphone operation. When the headset is plugged into the port, the main speaker is disabled.

PCMCIA Slots

Slot 1

The MX5 has one internal PCMCIA slot that conforms electrically to PCMCIA 2.1 specifications. The PC Slot supplies .75 of an amp at 3V, 5V and for dual 3.3V/5V cards. Battery voltage is supplied through unused pin 35 to support a WAN radio in the slot, if installed.

The PC slot is accessible by the use of a Phillips screwdriver to remove the back hatch of the unit. It accepts Type II cards only. Slot 0 accepts PCMCIA 2.4GHz radio cards.

Note: Care must be taken, when reattaching the back hatch to the device, to preserve the water tight seal.

Slot 0

The MX5 has one internal compact Flash card port that supports Type I and II CF cards. The slot is accessible in the same location as the PCMCIA card.

The radio drivers are stored on the compact flash card in the ATA CF slot (under the Main Battery pack). During the cold boot process, the `JmpStart` program accesses the compact flash card and loads the radio drivers and any saved parameters.

Physical Controls

Power Key

Note: Refer to the section titled "Power Modes" for information relating to the power states of the MX5.

The power key is located next to the <Z> key on the keypad. When a battery is inserted in the MX5 for the first time, the Power key must be pressed.

Quickly tapping the Power key places the MX5 immediately in Suspend mode. Quickly tapping the Power key again, or connecting the AC adapter, immediately returns the MX5 from Suspend.

Note: The unit will not suspend on AC power nor when connected through ActiveSync.

Reboot Sequence

When the Pocket PC desktop is displayed or an application begins, the power up (or reboot) sequence is complete. If you have previously saved your settings[3], they will be restored on reboot.

Warm Reset

Hold down the Power key and the Orange key for 4+ seconds. A warm reset does not affect the operating system and no data loss occurs.

Cold Reset

Hold down the Power key, the Blue key and the Orange keys for 4+ seconds.

The following steps will need to be performed when the MX5 powers on again:

1. Calibrate the touch screen.
2. Set the geographical Location.
3. Set the date and time.

Important:-- Because of the extreme nature of the Cold Reset, LXE recommends that the Cold Reset be used only as an emergency procedure and the Warm Reset be used as necessary.

LXE recommends the RegSave file be run when configuration changes are made.

Note: When performing a Cold Reset on a device, the system will ask if you want to overwrite files –LXE recommends selecting "No" and continuing with the Cold Reset process.

If you need to set up the integrated scanner **barcode reading parameters**, please refer to the "**Integrated Scanner Programming Guide**" on the LXE Manuals CD or the LXE website www.lxe.com.

[3] Configuration settings are saved when a configuration applet is exited by tapping OK.

PCMCIA and Flash Cards

- When removing or installing PCMCIA and/or Flash cards, protect the MX5 internal components from electrostatic discharge.

Use and operation of the Personal Computer Memory Card International Association (PCMCIA) device (e.g. PC card) is dependent upon both the type of device installed and the application(s) running on the computer.

Make sure the proper software is pre-loaded and radio cards are properly configured.

There is one PC card slot (Slot 1) and one Compact Flash card slot (Slot 0) in the MX5. Slot 1 powers a radio PC card or an ATA Flash card. The slots hold only one card at a time. Slot 1 supplies .75 of an amp at 5V or 3.3V.

The second slot (Slot 0) is designed to support a Type I or II Compact Flash disk. It is located on the hatch interface PCB, in the same area as the Radio card.

The compact flash card under the Main Battery pack is ATA only and is intended to store program CAB files, JmpStart utilities, the registry and the registry backup information.

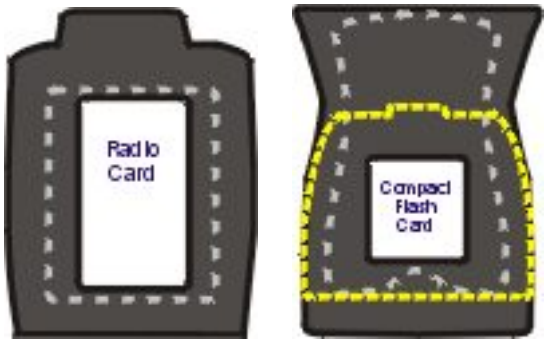


Figure 2-2 PCMCIA Radio Card and Flash Card Location

Note: As there is no PC Card management software loaded on the MX5, LXE recommends purchasing preformatted PC and Flash cards as well as preformatted Compact Flash disks.

Installation / Removal

Equipment required: A screwdriver (not supplied by LXE)

- LXE recommends that installation/removal of cards be performed on a clean, well-lit surface.
- Anti-static protection is required when installing/removing cards. (Not supplied by LXE)
- If you anticipate keeping a card out of the MX5 for a long period of time place it in a static-free storage container. Store in an area that is protected from dirt, moisture, and electrostatic contact.

PCMCIA Cards

Installation

1. Using a screwdriver, loosen the back hatch of the MX5 and carefully remove or loosen all cables. Disconnect the radio antenna from the radio card.
2. Set both the back and the screws aside.
3. Slide the PC Card, connector side first, into the slot until it seats. Use caution not to pull or snag the antenna connector.
4. If the PC Card is difficult to seat in the slot, remove the card, turn it around and re-install.

Removal

Grasp the top of the PC Card and pull it straight upward to remove.

Use caution not to pull or snag the antenna connector on a Radio card, if installed.

Flash Cards

Installation

1. Turn the MX5 off. Disconnect the AC adapter from the MX5.
2. ATA CF Card -- Loosen then remove the Main Battery Pack.
3. Hatch CF Card – Loosen then remove the back cover of the MX5 taking care not to pinch or twist any cables. Follow the instructions for removing the PCMCIA card, if installed.
4. Insert the CF card in the recessed slot, label side uppermost.
5. Replace the Main Battery Pack (or the PC card and back cover of the MX5) and perform a warm reset. *Always perform a warm reset when exchanging one Flash card for another.*

Removal

1. Turn the MX5 off. Disconnect the AC adapter from the MX5.
2. ATA CF Card -- Loosen then remove the Main Battery Pack.
3. Hatch CF Card – Loosen then remove the back cover of the MX5 taking care not to pinch or twist any cables. Follow the instructions for removing the PCMCIA card, if necessary.
4. Carefully lift the CF card up and away from the recessed slot.

Accessing the Data on CF and PCMCIA Cards

ATA CF Card

Tap the the Windows icon | **Programs** | **File Explorer** | **My Documents** | **My Device** | **Compact Flash** folder.

Hatch CF Card

Tap the the Windows icon | **Programs** | **File Explorer** | **My Documents** | **My Device** | **Storage Card (Storage Card 2** when the PCMCIA slot is not empty).

Hatch PCMCIA Card

Tap the the Windows icon | **Programs** | **File Explorer** | **My Documents** | **My Device** | **Storage Card**.

COM Ports

The MX5 supports three COM port options.

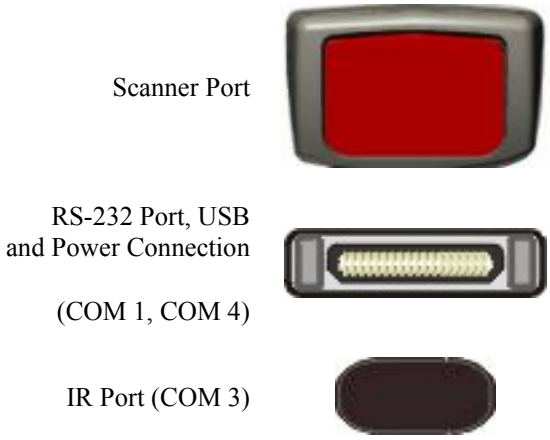


Figure 2-3 COM Ports

COM 1 port is always the left RS-232 port on the base of the MX5. COM 1 port accepts RS-232, USB and AC power connectors.

The RS-232 port on the docking cradle is “connected’ to the MX5 when a tethered scanner is connected to the RS-232 port on the MX5 cradle, and the MX5 is in the cradle. The cradle must be powered by an alternate AC or DC power source to enable tethered scanner use.

The **COM 3** port is always the IR port on the base of the MX5.

COM 4 is always the right RS-232 port on the base of the MX5. COM 4 port accepts RS-232 and AC power connectors.

To edit Scanner Com Port parameters, tap the Windows icon | **Settings** | **System** | **Scanner**. Change the parameter values and tap OK to save the changes.

USB Port

The USB port requires a DB26 to USB cable (available from LXE). The serial port/USB port also supports serial data transfer (using a null modem cable) and non-host USB I/O at 1.5 Mbps. The MX5 automatically detects the cable configuration.

Refer to section titled "Accessories" in this manual for part numbers for the DB26-USB cable and the null modem cable.

Integrated Scanner Port (Optional)

The MX5 Barcode Scanner is used to collect barcode data from any nearby compatible barcode label. Depending on the size of the barcode, size of bars and spacing and quality of the barcode, the scanner is used to read barcodes between 3" and 30". The barcode scanner reads UPC/EAN, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Code 128, Codabar and MSI symbologies.

The internal barcode scanner scans only when either Scan button is pressed or the scan trigger is pressed, if installed. Scan buttons have no effect on tethered barcode scanners connected to the RS-232 port. The Scanner LED illuminates during any integrated scanner activation.

Look on the label on the back of MX5. The type of installed scan engine should be clearly labeled and may be one of the following:

- Symbol SE 1223 HP
- Symbol SE 1223 LR
- Symbol SE 1223 ALR
- Symbol SE 2223 2D

Use the scanner label information if you need to program the *Symbol* scanner engine using the barcodes in the "Integrated Scanner Programming Guide". Refer to the "Integrated Scanner Programming Guide" on the LXE Manuals CD or the LXE website www.lxe.com.

Note: Use the scanner control panel to set up using both the integrated scanner and a tethered scanner.

To switch active scanner Com ports tap the Windows icon **| Settings | System | Scanner | Main** tab.

Note: If there is no internal scanner, Internal is greyed out.
On units without an internal scanner, radio buttons on Port 1 and Port 2 are greyed out -- the COM1 external radio button can be selected.

To assign baud rate, parity, stop bits and data bits to Com 1, tap the the Windows icon **| Settings | System | Scanner | COM1** tab.

If the scanner needs to be configured, refer to the "Integrated Scanner Programming Guide" on the LXE Manuals CD or the LXE website www.lxe.com.

Tethered Scanners (Optional)

LXE cable number MX5A055CBL3IND26D9M must be used with PowerScan® SR, LR and XLR tethered scanners connected directly to the MX5 device. Do not connect Symbol® tethered scanners to the MX5 device or to this cable.

Both PowerScan and Symbol tethered scanners will send scanned data to the MX5 when the MX5 is in the cradle and the scanners are connected to the RS-232 port on the powered cradle.

The MX5 Scan buttons have no effect on tethered scanners. Pressing the trigger handle on tethered scanners sends the data from the tethered scanner to the MX5.

See Also: "Tethered Barcode Scanner Data Entry Using the MX5 Cradle".

Note: When using the 8500 Series tethered scanners, the tethered scanner Power Mode must be set to "Reduced Power Mode"to conserve battery life. The reduced power mode setting will not impact performance of the 8500 series scanner. The default mode is "Continuous On". Please refer to the manufacturer's user guide for instruction.

RS-232 Serial Ports

RS-232 connection is made through an RS-232 Serial Port if installed. The connector is an industry-standard RS-232 DB26 female connector.

Figure 2-4 MX5 RS-232 Ports

COM1

PIN	SIGNAL	PIN	SIGNAL
1	CHG +	14	CHG GND
2	CHG +	15	CHG GND
3	CHG +	16	CHG GND
4	DCD1	17	RX2
5	RX1	18	TX2
6	TX1	19	GND
7	DTR1	20	RTS2
8	DSR1	21	VCCOUT2
9	RTS1	22	CTS
10	CTS1	23	VCCOUT1
11	SHIELD	24	SHIELD
12	USB +5V	25	USB COM
13	USB +	26	USB -

COM4

PIN	SIGNAL	PIN	SIGNAL
1	CHG +	14	CHG GND
2	CHG +	15	CHG GND
3	CHG +	16	CHG GND
4	DCD2	17	NC
5	RX2	18	NC
6	TX2	19	GND
7	DTR2	20	NC
8	DSR2	21	NC
9	RTS2	22	NC
10	CTS2	23	VCCOUT2
11	NC	24	NC
12	NC	25	NC
13	NC	26	NC

Figure 2-5 DB26 RS-232 Pinouts

USB Port

The USB port (the left port when the MX5 is face up) requires a DB26 to USB cable (available from LXE). The serial port/USB port also supports serial data transfer (using a null modem cable) and non-host USB I/O at 1.5 Mbps. The MX5 automatically detects the cable configuration. Refer to section titled "Accessories" in this manual for part numbers for the DB26-USB cable and the null modem cable.

An optional LXE USB cable is required to adapt the connection to a standard USB connector. Please refer to section titled “Accessories” for the USB part number when ordering.

MX5 Connector Pin	SIGNAL	USB Connector Pin
1 Not Used		1 Not Used
2 Not Used		2 From 7
3 To 3	D + (Green Wire)	3 From 3
4 Not Used		4 From 5
5 To 4	Ground (Black Wire)	5 Not Used
6 Not Used		6 Not Used
7 To 2	D - (White Wire)	7 Not Used
8 Not Used		8 Not Used
9 Not Used		9 Not Used

Figure 2-6 USB-Serial Cable Pinouts

IR Port

The InfraRed (IR) port provides a means of transferring information to a device with a similar port and the proper software. The IR port can be used to communicate with printers or a host computer with the use of an adapter.

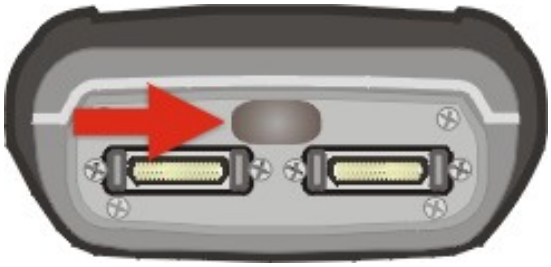


Figure 2-7 IR Port on MX5

The IR Port is specified as COM 3 and is a bi-directional half-duplex infrared port. It supports the Slow IrDA (Infrared Data Access) PHY Layer standard that allows communication speeds up to 115k baud.

When sending data through the IR port to another MX5's IR port, make sure both units are in close proximity to each other. The IR operating envelope has a distance range of 2 cm (.79 inches) to 15 centimeters (6 inches) with a viewing angle of 30 degrees.

Programmable Buttons

Figure 2-8 Scan Buttons

The Scan buttons can be programmed by the System Administrator to perform the following functions:

Disabled	Key press has no effect.
Scan	Pressing this key activates the laser scanner.
Enter	Pressing this key confirms a forms entry or transmits information. See the following section titled "Enter Key Function" in "The Keypad" section.
Tab	Pressing this key moves the cursor to the next input field.
Field Exit	IBM5250/TN5250 units only. Pressing this key exits an input field. See the following section titled "Field Exit Key Function" in "The Keypad" section.

The default setting for the right button is Enter. The default setting for the left button is Enter.

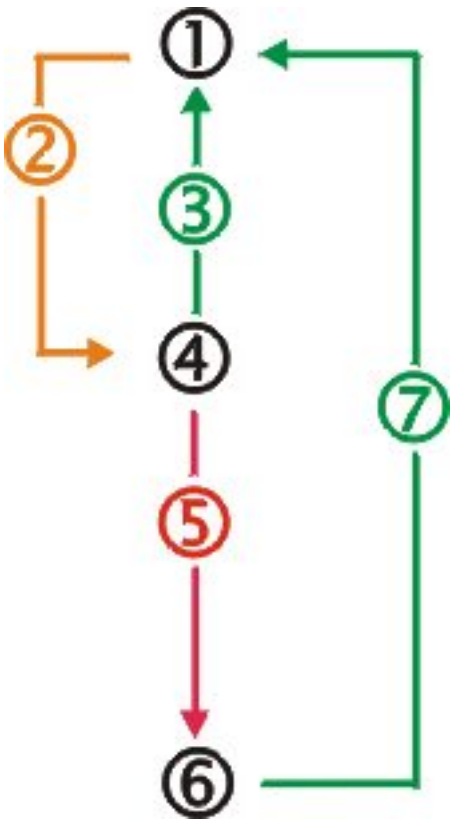
When the MX5 does *not* have an integrated scanner, both buttons default to Enter keys and the Scan selection is greyed out. The buttons can be programmed to perform other functions when there is no internal scanner.

How To: Program the Scan Buttons

Access: the Windows icon | Settings | System tab | Scanner | Key tab

Tap the desired radio button. Tap OK to close this menu option. Tap X to cancel changes. Any changes made are in effect immediately.

Power Modes



1 **On**

2 Tap Power key or the power has failed

3 Power key or connect to AC power supply

4 **Suspend**

5 Backup battery and main battery depleted

6 **Off**

7 Power On

Figure 2-9 Power Modes – On, Suspend and Off

On Mode

The Display

When the display is On:

- the keyboard, touchscreen and all peripherals function normally
- the display backlight is on until the Backlight timer expires
- when the Main Battery is hot-swapped, the display is turned Off.

The MX5

After a new MX5 has been received, a charged Main Battery inserted, and the Power key tapped, the MX5 is always On until both batteries are drained completely of power.

When the Main Battery and Backup Battery are drained completely, the unit is in the Off mode. The unit transitions from the Off mode to the On mode when a charged Main Battery is inserted or external power is applied.

LED Indicators

LED	When On ...
Scanner Active	Integrated barcode scanner function. • Red - scanning. • Green - good scan.
Main Battery Charging	Left Green LED flashes. When the battery is fully charged, the green LED remains lit.

Suspend Mode

The MX5

The Suspend mode is entered when the unit is inactive for a predetermined period of time or the user taps the Power key.

MX5 Suspend timers are set by tapping the Windows icon | **Settings** | **System** | **Handheld** | **Power tab**.

A Power key tap wakes the unit and resets the display backlight timers. Connecting the MX5 to AC power wakes the unit and resets the display backlight timers.

When the unit wakes up, the Display Backlight and the Power Off timers begin the countdown again. When any one of the above events occurs prior to the Power Off timer expiring, the timer starts the countdown again.

Note: The MX5 will not enter Suspend mode when connected via ActiveSync.

Off Mode

The unit is in Off Mode when the Main Battery and the Backup Battery are depleted. Insert a fully charged Main Battery and press the Power key to turn the MX5 On. The unit will then Cold Boot.

The Keypad

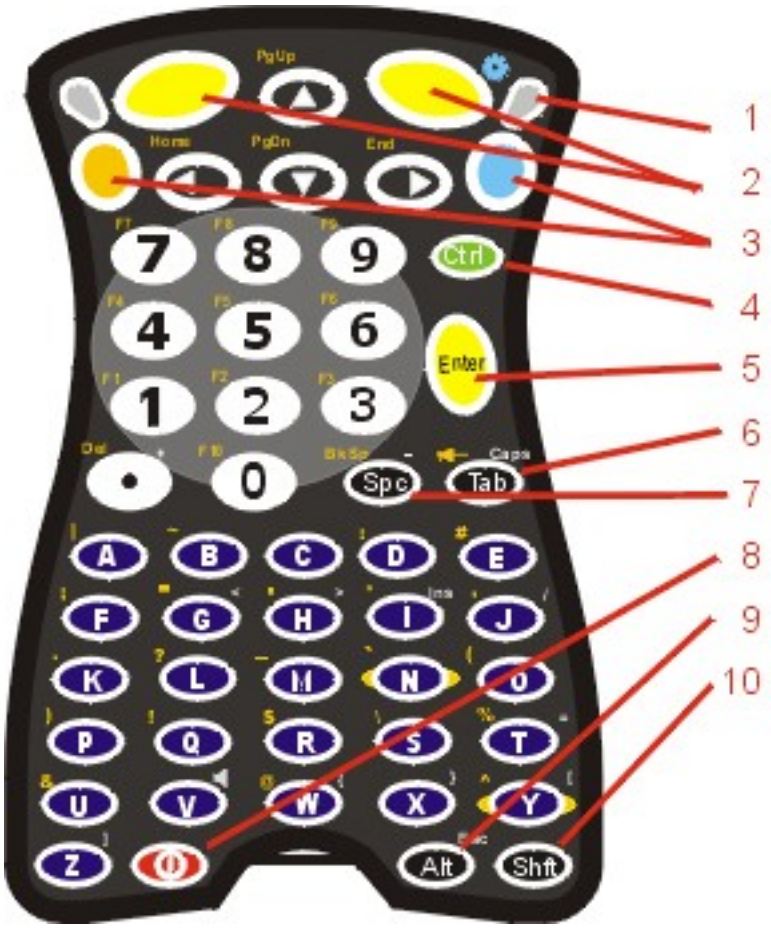


Figure 2-10 The ANSI / Batch Keypad

1	Scanner Active LED	6	Tab
2	Left and Right Scan	7	Spc
3	Blue and Orange 2nd Function Key	8	Power On/Off
4	Ctrl	9	Alt
5	Enter	10	Shift

The keymaps (keypress sequences) are located in “Appendix A - Key Maps.”

Scan Key Function

When programmed as Scan keys, either the left or right Scan key activates the scanner. The internal scanner scans only when the Scan button is pressed (or when the scan trigger is pressed on the optional trigger handle, if installed).

Enter Key Function

The Enter key is used to confirm a forms entry or to transmit information. How it is used is determined by the application running on the computer.

2nd Key Function

The Orange (top left) and Blue (top right) keys are 2nd keys used to activate the 2nd functions of the keypad. Printed above many keys are small characters, in either orange (on the left side of the key) or blue (on the right side of the key), that represent the 2nd function of that key. Using the 2nd key activates the second key function. Note that the 2nd key only stays active for one keystroke. Each time you need to use the 2nd function you must press the Orange or Blue 2nd key. To cancel a 2nd function before pressing another key, press the 2nd key again.

Ctrl Key Function

The Ctrl key enables the control functions of the keypad. This function is similar to a regular keyboard's Control key. Note that the Ctrl key only stays active for one keystroke. Each time you need to use a Ctrl function, you need to press the Ctrl key before pressing the desired key.

Alt Key Function

The Alt key enables the alternate functions of the keypad. This function is similar to a regular keyboard's Alt key. Note that the Alt key only stays active for one keystroke. Each time you need to use an alternate function, you need to press the Alt key before pressing the desired key.

Shft Key Function

The Shft key enables the shifted functions of the keypad. This function is similar to a regular keyboard's Shift key. Note that the Shift key only stays active for one keystroke. Each time you need to use a Shifted function, you need to press the Shft key before pressing the desired key.

When the Shft key is pressed the next key is determined by the major key legends, i.e., the alpha keys display lower case letters -- when CAPS is On alpha characters are capitalized. For example, when CAPS is On and the Shft key and the G key are pressed, a lower case g is displayed.

Spc Key Function

The Spc key adds a space to the line of data on the display. This function is similar to a regular keyboard's Spacebar. Note that the Spc key only stays active for one keystroke.

Field Exit Function

IBM TN5250 specific keypad only. The left Scan key can be programmed as a Field Exit key. The Field Exit key is used to exit an input field. If the field is an Auto Enter field, the auto transmit function is activated. Refer to the "Programmable Buttons" section for instruction.

Mode Key Functions

Caps Key and CapsLock Mode

This function is similar to a regular keyboard's CapsLock key. Note that the CapsLock mode stays active until the CapsLock key sequence is pressed again. Each time you need to use a Caps function, you need to press the Caps key sequence first. To cancel a CapsLock function press the Caps key sequence again.

The CapsLock key sequence is Blue key then the <Tab> key.

- No CapsLock AND No Shift keypress – result is a lowercase letter.
- CapsLock OR Shift – result is an uppercase letter.
- CapsLock AND Shift keypress – result is a lowercase letter.

Keypress Sequences

See Appendix A for key maps for all keypads.

Troubleshooting

The Equal sign (=) may appear as a (-) on an MX5 running Pocket PC 2002.

Tap the Windows icon | **Settings** | **System tab** | **Screen**.

Uncheck the "Enable Cleartype" checkbox and tap OK. Perform a Warm Reset.

Change the settings for Auto Complete typed words.

The Pocket PC software has the ability to AutoComplete typed words. This feature helps to shorten the keystrokes necessary to enter words. To change the Auto Complete setting, tap the Windows icon | **Settings** | **Input icon** | **Word Completion**.

Disable the "Suggest words when entering text" checkbox and all word suggestion is disabled.

If the user would like to have words suggested without the extra space appended to the end of the word, disable the "Add a space after suggested word" checkbox.

Tap OK when finished. The change takes place immediately.

Virtual Keyboard

The virtual keyboard is always available. Tap the keyboard icon at the bottom of the screen to put the virtual keyboard on the display. Using the stylus:

- Tap the 123 key to display either an alphanumeric keyboard or a numeric keyboard with characters usually accessed by capitalizing alphanumeric keys on a physical keyboard.
- Tap the Shift key to type one capital letter.
- Tap the CAPS key to type all capital letters.
- Tap the au key to access symbols.

Figure 2-11 Virtual Keyboard

Touch Screen

Figure 2-12 Touch Screen Display

The MX5 Touch Screen Display is an Active Color LCD unit capable of supporting QVGA graphics modes. Display size is 320 x 240 pixels in portrait orientation. The display covering is designed to resist stains. The touch screen allows signature capture and touch input. A pen stylus is included. The touch screen responds to an actuation force (touch) of 4 oz. of pressure (or greater).

The color display has a CCFL (Cold-Cathode Fluorescent Lighting) front light. When the unit is in Suspend mode, the reflective 256 color display appears to have a greenish hue.

The display is automatically turned off when the MX5 enters the Suspend state.

Display and Keypad Backlight Timer

When the Backlight timer expires the display and keypad backlight is turned off. The default value for the battery power and AC timer is 30 seconds.

See the section titled "Set the Display Backlight Timer" in Chapter 1 “Introduction”, section titled "Quick Start."

When the display wakes up, the Backlight timers will begin the countdown again.

Cleaning the Glass Display/Scanner Aperture

Keep fingers and rough or sharp objects away from the scan aperture and display. If the glass becomes soiled or smudged, clean only with a standard household cleaner such as Windex(R) without vinegar or use Isopropyl Alcohol. Do not use paper towels or harsh-chemical-based cleaning fluids since they may result in damage to the glass surface. Use a clean, damp, lint-free cloth. Do not scrub optical surfaces. If possible, clean only those areas which are soiled. Lint/particulates can be removed with clean, filtered canned air.

Speaker

Figure 2-13 Speaker Location

The MX5 Speaker has a loudness of at least 87 dB (1500 Hz) at 10 cm measured from the front of the unit. The Speaker volume is adjustable via the keypad or the Settings or by an application through the use of an API call. There are 5 distinct volume levels. The minimum volume level is 0 (no sound) with a default setting of 3. The volume sticks at maximum and minimum levels.

The speaker is disabled when a headset is plugged into the Audio Jack on the endcap. The audio volume can be adjusted to a comfortable level for the user. The volume is increased or decreased one step each time the volume key sequence is pressed.

Speaker volume is first enabled and adjusted using the “Sounds & Reminders" icon. The default value for Sounds and Reminders is midrange Volume and all sounds enabled. When volume and sounds are enabled, speaker volume can be adjusted using the volume key sequence, if desired.

Note: An application may override the control of the speaker volume. Turning off sounds saves power and prolongs battery life.

Using the Keypad

Note: Sounds & Reminders must have the options below “Enable sounds for” enabled before the following key sequences will adjust the volume.

To adjust speaker volume, locate the <V> key and the Blue key. Adjust the speaker volume by pressing the:

- Blue key, then the <V> key to enter Volume change mode.
- Use the Up Arrow and Down Arrow keys to adjust volume until the speaker volume is satisfactory.
- Press the Enter key to exit this mode.

Using the Touch Screen

Pocket PC 2000 The volume is adjusted using Windows icon | **Settings** | **Personal tab** | **Sounds & Reminders** icon then select the Volume tab.

Pocket PC 2002 The volume is adjusted using Windows icon | **Settings** | **Personal tab** | **Sounds & Notifications** icon then select the Notifications tab.

Change the volume setting and tap OK to save the change. You can also select / deselect sounds for key clicks and screen taps and whether each is loud or soft.

Sounds specific to primary events are selected using the options on the Sounds tab.
Reminder/Notification tones are selected using the options on the Reminders/Notifications tab.

As the volume scrollbar is moved between Loud and Silent, the computer will emit a beep each time the volume increases or decreases in decibel range.

Power Supply

The MX5 computer is designed to work with a Lithium-Ion (Li-ion) battery from LXE. Under normal conditions it should last approximately eight to ten hours before requiring a recharge. The more you use the scanner or the RF transmitter, the shorter the time required between battery recharges. The MX5 keeps date and time valid for a minimum of four days using a fully charged Backup Battery and a Main Battery that has reached the Low Warning point.

The MX5 maintains the date and time for a minimum of two days using a Main Battery that has reached the Low Warning point and a fully charged Backup Battery. The MX5 retains data, during a Main Battery hot swap, for at least 5 minutes.

Note: ***New Main Battery packs must be charged prior to use****. This process takes up to four hours in an LXE Multi-Charger and three hours when the MX5 is connected to external power through it's power jack.*

Checking Battery Status

Tap the Windows icon | **Settings** | **Power** tab. Battery level, status and charge remaining is displayed.

Tap the Windows icon | **Settings** | **Power** | **Battery Info** tab to view technical information and number of charge cycles for the Main Battery.

Handling Batteries Safely

- Never dispose of a battery in a fire. This may cause an explosion.
- Do not replace individual cells in a battery pack.
- Do not attempt to pry open the battery pack shell.
- Be careful when handling any battery. If a battery is broken or shows signs of leakage do not attempt to charge it. Dispose of it using proper procedures.

Caution	Nickel-based cells contain a chemical solution which burns skin, eyes, etc. Leakage from cells is the only possible way for such exposure to occur. In this event, rinse the affected area thoroughly with water. If the solution contacts the eyes, get immediate medical attention.
Caution	NiCd and Li-Ion batteries are capable of delivering high currents when accidentally shorted. Accidental shorting can occur when contact is made with jewelry, metal surfaces, conductive tools, etc., making the objects very hot. Never place a battery in a pocket or case with keys, coins, or other metal objects.

Main Battery Pack

The main battery pack has a rugged plastic enclosure that is designed to withstand the ordinary rigors of an industrial environment. Exercise care when transporting the battery pack making sure it does not come in contact with excessive heat or any power source other than the LXE Multi-Charger or the MX5 unit.

When the Main Battery Pack is properly installed in the unit it provides up to eight hours of operation depending upon operation and accessories installed. The battery pack is resistant to impact damage and falls of up to four feet to a concrete surface.

Under normal conditions it should last approximately eight hours before requiring a recharge. The more you use the scanner or the transmitter, the shorter the time required between battery recharges.

Battery Hot-Swapping

Replace the main battery pack after first pressing the power key and placing the MX5 in Suspend Mode. LXE recommends any work in progress be saved prior to replacing the main battery pack.

Simply replace the discharged main battery with a fully-charged main battery. The backup battery will retain data during a main battery hot-swap.

Place the battery in the battery well, making sure the tabs on the bottom of the battery pack fit into the slots at the bottom end of the battery well. Push the battery down into the battery well while fastening the screws. Fasten the screws tight enough to allow the rubber gasket to create a watertight seal. If the screws do not easily twist into the threaded opening, remove the battery and repeat the process.

Warning: Never replace the main battery in a hazardous location.

Low Battery Warning

It is recommended that the Main Battery Pack be removed and replaced when it's energy depletes. When the Low Battery Warning appears do an orderly shut down, minimizing the operation of any installed devices and insuring any information is saved that should be.

When the unit is in an ON state, a low battery warning dialog box appears on the display and a warning tone is emitted.

Note: Once you receive the Low Battery Warning, you have approximately 5 minutes to perform an orderly shutdown and replace the main battery pack before the unit powers off. The Low Battery Warning will transition to Suspend before the computer powers off.

Backup Battery

A fully charged Nickel Metal Hydride (NiMH) coin cell backup battery provides power to the unit for up to 24 hours when the main battery has been depleted, removed or has failed. The backup battery requires no user intervention. Replacement is performed by LXE. LXE recommends an MX5 in storage have a charged main battery pack installed.

Note: This mobile device's backup battery maintains it's charge by drawing power from the main battery pack. Always store unused devices with a fully charged main battery pack installed. LXE recommends an in-use mobile device be frequently connected to an external power source to retain optimum power levels in the main battery pack and the backup battery. When the backup battery and main battery pack are dead, the mobile device reverts to setup defaults when a fully charged main battery pack is installed and the device is powered On again.

Battery Maintenance Publication

The LXE publication "Getting the Most from Your Batteries" is available on the LXE Manuals CD and is a single-source guide to battery management. The publication contains information about battery recharging, conditioning, and other pertinent issues.

Battery Chargers

MX5 Multi-Charger (Optional)

Figure 2-14 LXE Multi-Charger

The MX5 Main Battery Pack can be charged in the LXE Multi-Charger.

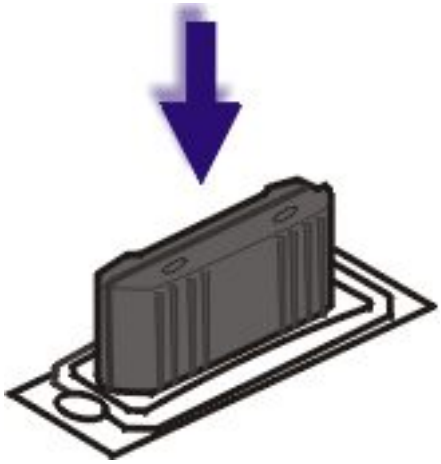


Figure 2-15 Insert Battery Pack in Charging Pocket

Lower the battery pack straight into the battery charger pocket and push it down firmly. Do not "slam" the battery into the charging cup or drop it into the cup.

Failure to follow these instructions can result in damage to the main battery or the charger.

Please refer to the specific battery charger user's guide for technical information and operating instructions.

External Power Supply (Optional)

The MX5 DC adapter can be plugged into either of the D26 pin connectors on the bottom of the MX5.

The cradle power jack is located on the back of the cradle.

Figure 2-16 AC/DC 12V Power Supply

Note: When the MX5 is receiving power through a cradle connected to external power the Battery Charge LED on the MX5 is green.

Cradles

Note: The "MX5 Cradle Reference Guide" contains cradle installation and technical information.

Important: The cradles are not designed to secure an MX5 with a protective padded case. The vehicle cradle is not designed to secure an MX5 with a trigger handle. The desktop cradles will secure mobile device's with handstraps or trigger handles.

MX5 docking cradles give the MX5 the ability to communicate with a host computer and other devices. In addition, using wall AC adapters or DC/DC converters, the cradle charges the main battery. The MX5 can be either On or in Suspend mode while in the cradles.

LXE offers three desktop cradles and one vehicle cradle:

Standard Desktop Cradle requires AC power before main battery charging can commence. This cradle does not have an active LED on the front housing. MX5A002DESKCRADLE
Enhanced Desktop Cradle requires AC power before main battery charging can commence. It will charge both the main battery in the MX5 and another MX5 Battery Pack at the same time. MX5A003EDESKCRADLE
Enhanced Desktop Cradle with Ethernet Port requires AC power before main battery charging and host/client communications can commence. It will charge both the main battery in the *MX5 CE. NET* device and another main battery pack at the same time. MX5A004ETHDESKCRADLE
Vehicle Mount Cradle requires AC/DC power before main battery charging can commence. MX5A001VMCRADLE

Note: LXE offers a device similar in appearance to the MX5 – the MX5 CE. NET device. All MX5 cradles can be used by the MX5 running Pocket PC except for the Enhanced Desktop Cradle with Ethernet Port, which has been developed specifically for the MX5 CE. NET device, and cannot be used by the MX5 running Pocket PC.

Cradle COM port and power cables are available from LXE. The RS-232 connector is located on the back of the cradle. When the MX5 is properly docked, the COM 1 RS-232 interface connects with the DA9 RS-232 port in the cup at the front of the cradle. The cup at the back of the desktop cradles accept a single Battery Pack for charging.

MX5 cradles are not approved for use in Hazardous Locations.

Tethered Barcode Scanner Data Entry Using the MX5 Cradle

The MX5 supports an accessory barcode label reading device (a tethered scanner) connected to the serial port on a vehicle cradle. Keypad data entries can be mixed with barcode data entries. Any tethered scanner that decodes the barcode internally and outputs an RS-232 data stream may be used. It sends the data to the MX5 in ASCII format.

The serial port parameters may need to be changed to match the parameters of the tethered scanner.

When a tethered scanner is connected to the serial port on a vehicle cradle, the MX5 scanner must be configured as follows:

Windows icon | **Settings | System | Scanner | Main** | either **Port 1** or **Port 2**

Select COM1 External on one of the ports. The tethered scanner must be connected to the DB9 port on the vehicle cradle. The cradle must be powered by an alternate AC or DC power source to enable tethered scanner use.

See Also: "Tethered Scanners (Optional)".

Chapter 3 System Configuration

Introduction

There are several different aspects to the setup and configuration of the MX5. Many of the setup and configuration settings are dependent upon the optional features such as hardware and software installed on the unit. The examples found in this chapter are to be used *as examples only*, the configuration of your specific MX5 computer may vary. The following sections provide a general reference for the configuration of the MX5 and some of it's optional features.

Note: When a new battery is installed in the MX5 for the first time (or when the Backup battery is completely depleted), the Time and Date must be re-set.

The MX5 may be running either Pocket PC 2000 or Pocket PC 2002. This guide highlights the differences in this way:

Pocket PC 2000 - The menu path or command syntax for Windows Pocket PC 2000 units only. System configuration information is contained in Appendix C "System Configuration - Pocket PC 2000".

Pocket PC 2002 - The menu path or command syntax for Windows Pocket PC 2002. System configuration information is contained in Chapter 3 "System Configuration".

Throughout the rest of this chapter, if there is no distinction between Pocket PC 2000 and Pocket PC 2002, the instruction or information is the same for both versions.

Windows for Pocket PC

Access: the Windows icon | Settings | System tab | Handheld | Versions tab

For general use instruction, please refer to commercially available Windows for Pocket PC 2002 user's guides or the Windows for Pocket PC on-line Help application installed with the MX5.

This chapter's contents assumes the system administrator is familiar with Microsoft Windows options and capabilities loaded on most standard Pocket PC devices and/or desktop computers.

Therefore, the sections that follow describe only those Windows capabilities that are unique to the MX5 and it's Pocket PC environment.

Installed Software

Note: Some standard Pocket PC options require an internal or external modem connection. Modems are not available from LXE nor supported by LXE.

When you order an MX5 you receive the software files required by the separate programs needed for operation and radio communication. The files are loaded by LXE and stored in subdirectories on the ATA CF card installed under the Main Battery pack.

This section lists the contents of the subdirectories and the general function of the files. Files installed in each MX5 are specific to the intended function of the MX5.

Files installed in each MX5 configured for an RF environment contain PCMCIA card radio specific drivers – the drivers for each type of radio are specific to the manufacturer (e.g. Cisco) for the radios installed in the RF environment and are not interchangeable.

Software Load

The software loaded on the MX5 computer consists of Windows for Pocket PC 2000, hardware-specific OEM Adaptation Layer, device drivers, MS Pocket Internet Explorer browser and utilities.

The radio drivers are stored on the compact flash card that is located behind the main battery. During the cold boot process, the JmpStart program accesses the compact flash card and loads the radio drivers and any saved parameters.

The software supported by the MX5 is summarized below:

Operating System

- Windows Pocket PC 2002. Only one Pocket PC version can be loaded on the MX5 at a time.

Radio Drivers

- Only one radio is installed in the MX5 at any one time. The 2.4GHz type of PC radio card resident on the MX5 determines the type of radio driver running on the MX5.

Scanner Driver

LXE API

CAB Files

When updating CAB files, first delete the `RegTemp.reg` registry backup file, then perform a cold boot. `JmpStart.cld` will install the drivers listed in it's script. Configure the driver settings and then create `RegSave` to save the registry contents. Then warm boot to load the drivers.

When adding new (additional) CAB files, perform the same step shown above, except edit `JmpStart.cld` to add the name of the new CAB(s).

Note: Please contact your LXE representative to get access to CAB files as they are released by LXE.

The Start Menu

For general use instruction, please refer to commercially available Pocket PC user's guides or the on-line Help application installed with the MX5.

The MX5 Start menu appearance is similar to that of a hand held Palm organizer. The default bootup screen is **Today**.

Tap the Windows icon to display the Start menu. The Start menu is separated into sections:

- **Start menu** displaying Quick Start Applications
- **Programs**, which are Application specific e.g. Word, Inbox, etc.
- **Settings** which are split into Personal, System and Connection segments.
- **Find** capability
- **Help**

Factory Default Settings		
Option	*Active*	*Same as Desktop*
Today	Yes	Yes
Calendar	Yes	Yes
Contacts	Yes	Yes
Inbox	Yes	Yes
Internet Explorer	Yes	Yes
Notes	Yes	Yes
Tasks	Yes	Yes
Windows Media	Yes	Yes

Edit Start Menu Item List

Tap the Windows icon | **Settings** | **Personal** | **Menus** and select the applications to be displayed as Quick Start Applications in the Start Menu.

Inbox

This start menu option requires a connection to a mail server. There are few changes in the Pocket PC version of Inbox as it relates to the general desktop Windows PC Microsoft Outlook Inbox options. Tap the Windows icon | **Help** to access Inbox Help. ActiveSync® can be used to transfer messages between the MX5 inbox and a desktop PC inbox.

Programs Options

Access: **the Windows icon | Programs**

Help is always available at any stage – tap the Windows icon | **Help** for context-sensitive help. Tap OK to close Help and return to the program or application.

The following applications do not have context-sensitive Help available:

- ORiNOCO Client
- Cisco Client
- Scanner Control
- Handheld

Games

Access: **the Windows icon | Programs | Games**

Tap the game name icon to start a game. Tap OK to close the Games window and return to the Programs window.

Calculator

Access: **the Windows icon | Programs | Calculator**

Exit the Calculator program by tapping the Windows icon.

Cisco Client

Access: **the Windows icon | Programs | Cisco | ACU**

Note: Online help is not available for this option.

Tap OK to return to the Programs options.

Aironet Client Utility

Note: The parameter values that follow are based on the driver version for the installed radio card.You may not have all the parameters listed.

Factory Default Settings		Other Options
SSID	Blank	
Client Name	Blank	
Infrastructure Mode	Yes	No
Power Save Mode	Fast PSP	CAM, Max PSP
Network Security Type	None	LEAP, Host based EAP
WEP	No WEP	Static WEP keys, Dynamic WEP keys
WEP Keys	Blank	
Authentication Types	Open	Shared Key
User Name	Blank	
User Password	Blank	
User Domain	Blank	
LEAP	Disabled	Enabled
Mixed Mode	Disabled	Enabled
World Mode	Disabled	Enabled
Data Rates	Auto	1, 2, 5.5, 11 Mb Only
Transmit Power	MAX	1mw, 30mw
Offline Channel Scan	Enabled	Disabled

Cisco Link Status

Immediately runs status on : signal strength, signal quality and overall link quality.

Client Encryption Manager

Enter the password to set encryption codes. Default password is “Cisco”. The password is case sensitive.

Client Statistics Utility

Immediately runs statistics, cumulative. An option is available to forward statistics from the client.

Load New Firmware

The current firmware version number is displayed. An option is available to load different firmware if supplied by the user.

Site Survey Tool

Immediately runs signal strength and quality and link speed. An option is available to Setup parameters for Active Mode reporting.

Wireless Login Module

LEAP must be enabled before this option can be edited or viewed.

Spectrum24

Access: Icon in Lower Right Hand Corner

Tap the icon in the lower right hand corner of the screen in the status bar and select one of the menu options.

Status

Tap the Close button at any time to close the following informational displays.

Signal	Displays the quality of the signal quality through the radio.
Info	Displays version information and current status of the radio activity.
IP Status	Displays information relating to the IP type, address, masks and the host name.
Ping	Begin a ping test.
APs	Displays the AP Mac address and the Signal strength.

WLAN Profiles

Note: The parameter values that follow are based on the driver version for the installed radio card.You may not have all the parameters listed.

Factory Default Settings		Other Options
Wireless LAN Mode		
Profile Name	Symbol	
802.11 ESSID	Symbol	
Operating Mode	Infrastructure	Ad Hoc
Country	USA	
Encryption		
Algorithm	Open System	40 Bit, 128 Bit, Kerberos, EAP-TLS
IP Config	DHCP	Static
Power		
Infrastructure	Automatic	Power Plus
Automatic Power Saving Mode	Enabled	Disabled
Manual Power Saving Mode	80%	0 – 100 %

Tap the OK, Cancel or X butten when changes have been made.

Find WLANS

Select a network from those shown as Available.

Options

Factory Default Settings	
Access AP Networks	Enabled
Access Ad-Hoc networks	Enabled
Disable Profile Roaming	Disabled
Enable Sounds	Disabled
Allow Pocket PC to suspend	Disabled
Change Password	Blank

ActiveSync

Access: the Windows icon | ActiveSync

When finished, Tap OK to close the folder. Tap the Windows icon | **Help** for context-sensitive help.

Tools

Use this option to select IR connection or configure the USB/serial port setting. Tap the Windows icon | **Help** for context-sensitive help. Tap X to close.

Note: ActiveSync does not transmit through the IR port in cradles.

File Explorer

Access: the Windows icon | Programs | File Explorer

Factory Default Settings	
Business Folder	Yes
Personal Folder	Yes
Templates	Yes

There are few changes in the Pocket PC version of Windows Explorer as it relates to the general desktop PC Windows Explorer options. Tap the Windows icon | **Help** to access File Explorer Help. Press the Windows icon to return to the Start menu.

Infrared Receive

Access: the Windows icon | Programs | Infrared Receive

Tapping this menu icon begins a connection to a sending device. If no connection is made, the program waits for a tap on the “Close” button.

Internet Explorer

Access: **the Windows icon | Programs | Internet Explorer**

This option requires a radio card and an Internet Service Provider. There are few changes in the Pocket PC version of Internet Explorer as it relates to the general desktop Windows PC Internet Explorer options. Tap the Windows icon | **Help** for context-sensitive help..

Microsoft Reader

Access: **the Windows icon | Programs | Microsoft Reader**

This application is used to display electronic books on the screen of the MX5. Tap the Windows icon | **Help** for context-sensitive help.

MSN Messenger

Access: **the Windows icon | Messenger**

There are few changes in the Pocket PC 2002 version of MSN Messenger as it relates to the general desktop PC Windows MSN Messenger options. Tap the Windows icon | **Help** to access Help. Tap the Windows icon to return to the Start menu.

Terminal Services Client

Access: **the Windows icon | Terminal Services Client**

There are few changes in the Pocket PC 2002 version of Terminal Services Client as it relates to the general desktop PC Windows Terminal Services Client options. Tap the Windows icon | **Help** to access Help. Tap the Windows icon to return to the Start menu.

ORiNOCO Client

Access: **the Windows icon | Programs | ORiNOCO**

Note: Online help is not available for this option.

Tools

Edit Wireless Profiles	Add / edit the configuration profiles
Version Info	Displays installed radio version levels
Load/Unload Automatically	The default is "Load Automatically." Use this option to load the radio drivers when the MX5 is rebooted.
Suspend While Connected	Do not use this option when Lucent radio is installed in the MX5.
Exit	

Advanced

Link Test	Test the link between the Access Point and the client radio.
Site Monitor	Test the link between all stations connected to the same Access Point as this MX5

Note: Start/settings/connections/network/Orinoco Network Adapter Installed – acknowledge the IP address (using DHCP, Use server assigned) by clicking OK. Then perform a warm boot to update the registry. This is important when unit has been cold booted.

Pocket Excel

Access: **the Windows icon | Programs | Pocket Excel**

There are few changes in the version of Pocket Excel as it relates to the general desktop PC Windows Microsoft Excel application. Tap the Windows icon | **Help** for context-sensitive help.

Pocket Word

Access: **the Windows icon | Programs | Pocket Word**

There are a few changes in the version of Microsoft Word as it relates to the general desktop Windows PC Microsoft Word options. PocketWord documents are saved with a .PWD extension instead of .DOC extension although they can be saved as .RTF or .DOC files on the MX5. Microsoft Word templates (.DOT files) are converted to Pocket Word templates (.PWT). Tap the Windows icon | **Help** for context-sensitive help. When ActiveSync transfers .pwd files to the desktop from the MX5, the file is converted to .doc files by ActiveSync.

Touch Calibrate

Access: **the Windows icon | Programs | Touch Calibrate**

Use this program to align the touch screen. Tap OK to close the align screen program without making changes. Tap the Windows icon | **Help** for context-sensitive help.

Settings Options

Access: **the Windows icon | Settings**

The following options represent the factory default Pocket PC installation. Your system may be different based on the software and hardware options purchased.

Help is always available at any stage – tap the Windows icon, tap Help and context-sensitive online help is displayed. Tap OK to close Help and return to the program or application.

Personal Tab

Buttons

Access: **the Windows icon | Settings | Personal tab | Buttons**

Program Buttons

Use this option to assign a program function to the program hardware buttons.

Button 1	Blue plus Up Arrow key	Button 3	Blue plus Left Arrow key
Button 2	Blue plus Down Arrow key	Button 4	Blue plus Right Arrow key displays the Start menu (dedicated function)

Up/Down Control

Set Delay before the first repeat and the repeat rate for the screen up / down arrow keys.

Screen Up	Orange plus Up Arrow key
Screen Down	Orange plus Down Arrow key

Input

Access: the Windows icon | Settings | Personal tab | Input

Factory Default Settings	
Input Method	Keyboard
Keys	Small keys
Word Completion	Suggest
Add Space after	Yes
Voice Recording	44,100 Hz
Capitalize	Yes
Scroll	Yes

Use this option to select Character Recognition or the keypad (including the virtual keyboard) when entering data.

The Pocket PC software has the ability to AutoComplete typed words. This feature helps to shorten the keystrokes necessary to enter words. To change the Auto Complete setting, tap the Windows icon | **Settings** | **Input icon** | **Word Completion**. Disable the "Suggest words when entering text" checkbox and all word suggestion is disabled.

If you would like to have words suggested without the extra space appended to the end of the word, disable the "Add a space after suggested word" checkbox. Tap OK when finished. The changes take place immediately.

Menus

Access: the Windows icon | Settings | Personal tab | Menu

Factory Default Settings	
Calendar	Yes
Contacts	Yes
Inbox	Yes
Internet Explorer	Yes
Notes	Yes
Tasks	Yes
Windows Media	Yes

Edit the default Start menu or create a new one.

Owner Information

Access: the Windows icon | Settings | Personal tab | Owner Information

Factory Default Settings	
Identification	Blank
Notes	Blank

There is no change from general desktop PC Owner Properties display. Enter the information and Tap the OK box to save the changes. The changes take effect immediately.

Password

Access: the Windows icon | Settings | Personal tab | Password

Factory Default Settings	
Password	Blank
At Power On	Disabled

Note: Once a password is assigned, and "Require password when device is turned on" is activated, each time the MX5 turns 'on', the password will need to be entered. If you forget the password, it cannot be restored without performing a cold boot on the unit (which erases all memory).

There is no change from general desktop PC Password Properties options. Enter the password, then type it again to confirm it and Tap the OK box to save the changes. The password is immediately in effect.

Sounds

Access: **Windows icon | Settings | Personal tab | Sounds & Notifications.**

Factory Default Settings	
Volume	
Events	Enabled
Programs	Enabled
Notifications	Enabled
Volume	Middle of Bar
Screen Tap	Loud
Hardware Buttons	Loud
Sounds	
Scheme	WindowsCE
Reminders	
Display Message	Enabled
Play Sound	Enabled

Make changes and tap OK. The changes take effect immediately.

Today

Access: **the Windows icon | Settings | Personal tab | Today**

Checked items appearing on the Today screen:

- Date
- Today title bar
- Owner info
- Calendar
- Inbox
- Tasks

The Move Up, Move Down and Options.. buttons are greyed out for those items that cannot be edited.

Set the timer for displaying the Today screen when the device is idle. The default is 4 hours.

Disable the checkbox next to “Display Today screen if device not used for x hours” to prevent the Today screen to appear after the specified period of inactivity.

Tap the OK button when finished. Changes take effect immediately.

System Tab

Access: **the Windows icon | Settings | System tab**

Tap the Windows icon | **Help** at any time for context-sensitive help.

About

Access: **the Windows icon | Settings | System tab | About**

Displays important device information. There are three tabs:

Version	Displays the Pocket PC version installed and the build number. Also the type of processor, memory installed, whether the expansion slot is in use and the current MX5 owner name.
Device ID	The default device name used to identify the MX5 to other computers is "Pocket_PC". The description is blank. You can make changes and tap the OK button. The changes take effect immediately.
Copyrights	This information may be changed when a newer version of Pocket PC is loaded.

Tap OK to close this menu option.

Administrator – Pocket PC 2002

Access: **the Windows icon | Settings | System tab | Administrator**

LXE AppLock Administration utility. See Chapter 4 "AppLock" for details.

Screen

Access: **the Windows icon | Settings | System tab | Screen**

The screen can be aligned at any time. To start, tap the Screen button with the stylus.

Follow the instructions on the screen and press the Enter key (or tap the OK icon) to save the new calibration settings. You can also press the <Esc> key sequence to cancel or quit.

Equal Sign vs the Dash

The Equal sign (=) may appear as a (-) on an MX5 running Pocket PC 2002.

Tap the Windows icon | **Settings** | **System tab** | **Screen**.

Uncheck the "Enable Cleartype" checkbox and tap OK. Perform a Warm Reset.

Backlight

Access: the Windows icon | Settings | System tab | Backlight

Factory Default Settings	
Timeout	2 seconds
Always Allowed	Disabled
No key/pen activity	Disabled
No key/pen activity and resume on activity	Enabled
Keyboard backlight	Enabled

Using the backlight while on battery power substantially reduces battery power.

You can check the battery status by selecting the Windows icon | **Settings** | **System tab** | **Handheld** | **Power** tab. On this screen, the timeout for *turning off the device if not used for* 3 minutes (default value) while on battery power, can be adjusted. The factory default setting for this parameter is Enabled.

Clock

Access: the Windows icon | Settings | System tab | Clock

Factory Default Settings	
Time	
Where	Home
Visiting	Paris
Default city	Atlanta, GA
Time Zone	GMT-5
Time	Current
Date	Current
Alarms	
Four alarm settings	Disabled

Handheld

Access: **the Windows icon | Settings | System tab | Handheld**

Note: Online help is not available for this option.

Power

Factory Default Settings	
Turn off if not used for	Enabled
Timer	3 minutes

Communications

Factory Default Settings	
Port 1	
Main Connector	Enabled
Options Bay	Disabled
Power Output	Enabled
Port 2	
Main Connector	Disabled
Options Bay	Enabled
Power Output	Disabled

Versions

This screen is populated with the following information:

- Util Applet Version
- CPU
- CPU Version
- Controller Version
- CPLD Version
- Platform Version
- Serial Number

Battery Info

This screen is populated with the following information:

- Smart Battery
- Date of Manufacture
- Maximum Capacity
- Gas Gauge
- Charging
- Voltage
- Serial Number
- Chemistry
- Charge Cycles
- E2PROM
- Temperature
- Current

Note: The Main Battery in the MX5 is a smart battery and includes a registry that records the number of charge cycles the battery has experienced. In some cases, the MX5 battery level may be displayed as "Unknown". The battery must be fully charged at least once and then the MX5 will display the correct battery status information.

Keyboard

Although the default keyboard layout is Standard, this parameter must be changed to Alphanumeric for the LXE MX5.

This value may also need to be reset after a Cold Boot.

Factory Default Settings	
Keyboard Layout	Standard

Memory

Access: **the Windows icon | Settings | System tab | Memory**

Tap the Windows icon | **Help** at any time for context-sensitive help.

Factory Default Settings	
Main	
Total main memory	63.18 MB
Storage setting	50% of available memory
Program setting	50% of available memory
Storage Card	
Not installed	
Running Program List	
File Explorer	Enabled

If a program becomes unstable or stops running, use the Running Program List to highlight the program name, the select Activate, Stop or Stop all programs.

Tap OK to close the menu.

Regional Settings

Access: **the Windows icon | Settings | System tab | Regional Settings**

No change from general desktop PC Regional Settings Properties options. Adjust the settings and tap the OK box to save the changes. The changes take effect immediately.

Factory Default Settings	
Regional Setting	English (United States)
Number	123,456,789.00 / -123,456,789.00 neg
Currency	$123,456,789.00 pos / ($123,456,789.00) neg
Time	h:mm:ss tt (tt=AM or PM)
Date	M/d/yy short / dddd,MMMM,dd,yyyy long

Remove Programs

Access: **the Windows icon | Settings | System tab | Remove Programs**

Tap the name of the program, then tap Remove. Tap OK to close this option. Changes take place immediately.

User installed device drivers, when removed, require a cold boot to completely remove the program.

Scanner

Note: Online help is not available for this option.

Access: the Windows icon | Settings | System tab | Scanner

The Keys may need to be set to Scan if there is an integrated scanner in the MX5.

Factory Default Settings	
Main	
Port 1	Disabled
Port 2	Disabled
Send key messages WEDGE	Enabled
Keys	
Left	Enter
Right	Enter
COM Ports (COM1 and COM4)	
Baud Rate	9600
Parity	None
Stop Bits	1
Data Bits	8

Note: If the internal scanner has to be configured to operate at any communication settings other than 9600, N, 8, 1 and the computer either loses power or a cold boot command is entered, the Scanner applet must be reconfigured to match the scanner communication settings.

Note: ActiveSync will not work over the COM1 port if COM1 external is enabled in the Scanner applet as a scanner input.

Tap OK to close this menu option. Tap X to cancel changes. Any changes made are in effect immediately.

Wireless Network

Access: the Windows icon | Settings | System tab | Wireless Network

Use this option to activate a wireless profile from the pull-down menu. Add, edit or delete a user-defined wireless profile.

Factory Default Settings	
Profile	"default"
Network type	Access Point
Network name	Blank
Enable Data Security	Disabled
Card Power Management	Off
Keys	
Left	Enter
Right	Enter

Tap OK to close this menu option. Any changes made are in effect immediately.

Connections Tab

Tap the Windows icon | **Help** at any time for context-sensitive help.

AvantGo Connect

Access: the Windows icon | Settings | Connections tab | AvantGo Connect

Factory Default Settings	
Server AvantGo.com (sync.avantgo.com:80)	
Hostname	Sync.avantgo.com
Port	80
Username	Blank
Password	Blank
Connection Options	
Connect to this server	Enabled
Refresh all content at next sync	Enabled
Connect securely	Disabled

Use this option to assign server settings and synchronize with all servers using AvantGo. Tap OK to close this menu option. Any changes made are in effect immediately.

Beam

Access: the Windows icon | Settings | Connections tab | Beam

If the option to "Receive all incoming beams and select discoverable mode" is checked, the MX5 will automatically receive all incoming InfraRed transmissions. InfraRed Receive must be enabled on the receiving device, if sending IR from the MX5 to another device. See the section titled “Infrared Receive” for more information.

Network / Network Adapters

Access: Windows icon | Settings | Connections tab | Network Adapters.

Tap an adapter to view or change the properties.

Factory Default Settings	
NE2000 Compatible Ethernet Driver	
Use server-assigned IP address	Default
Country code	1
Dialing Patterns	
Local calls	9,G
Long distance	9,1FG
International	9,011,EFG

Tap OK to close this menu option. Any changes made are in effect immediately.

Find

Access: **the Windows icon | Find**

There are few changes in the Pocket PC version of the Windows Find program as it relates to the general desktop PC Windows Find function. Tap the Windows icon | **Help** to access context-specific help.

Help

Access: **the Windows icon | Help**

There are few changes in the Pocket PC version of the Windows Help program as it relates to the general desktop PC Windows Help program. Tap OK to close Help.

Compact Flash Card Files and Programs

CF Compact Flash Card | Flash Card

The CF card, located under the Main Battery Pack, is intended to protect the user from losing the LXE drivers and configuration information in the event of a cold boot. After the MX5 has been initially configured (when a new unit is set up by the end user for the first time), the RegSave.exe utility should be run to create the RegTemp.reg registry backup file. Once this has been done, if a cold boot occurs, RegRest.exe runs automatically after the cold boot and the user is prompted to do a warm boot to invoke the restored registry settings. Also, on a cold boot, the contents of any .cab files (for API, drivers, etc.) are automatically unpacked and then restarted after the subsequent warm boot.

Access Files on the CF Card

Tap the the Windows icon | **Programs** | **File Explorer** | **My Documents** | **My Device** | **Compact Flash** folder.

Note: Perform a warm reset when exchanging one CF card for another.

CF Files

Persistent Storage Memory is not available on the MX5. Instead, a Flash card is used for permanent storage of the LXE drivers and utilities. It is also used for registry content back up. The CF card is located in the socket under the main battery pack.

It is important that all CAB files on the card be given Read-Only attributes. On the MX5, when a read-only CAB file is unpacked, it is not deleted.

The following files are included on every MX5 CF card:

File	Description
WEDGE.CAB	Cab file containing the LXE scanner driver and control panel for the MX5.
API.CAB	CAB file containing the LXE API for the MX5.
RegSave.exe	A utility that backs up the registry to the RegTemp.reg file that is stored on the CF card. RegSave.exe displays a message box to indicate that it is in progress and displays a message stating it has completed successfully or that an error occurred during the backup process.
RegRest.exe	A utility to force restoring the registry from RegTemp.reg.
JmpStart.cld	A script file that executes following a cold boot (keypad-initiated or when a charged main battery is installed following a complete loss of main and backup battery power). JmpStart.cld unpacks all the cab files on the CF card and executes RegRest.exe to restore the registry from the RegTemp.reg file. This file is written to load every CAB file that are installed initially by LXE. User installed CAB files would need to be added.

File	Description
	Pocket PC 2000: When it executes, if any CABs are not present, a dialog box will appear that states "Double-tap a CAB file to install its application." The user needs to tap OK to remove the dialog box (or boxes) and the MX5 will complete the boot process.
WaitInit.exe	Called by `JmpStart.cld` to delay unpacking the CB files until after cold boot initialization has completed.
CAB Files	The following CAB files are optional and may or may not be present: LUCENT.CAB — Lucent radio driver and utilities. CISCO.CAB — Cisco radio driver and utilities. RFTERM.CAB — RFTerm terminal emulation application.

API Calls

The LXE specific API calls for the MX5 running Windows Pocket PC 2002 are included in the "LXE CE API Programming Guide."

This document lists only the LXE-specific API calls and details which calls from the standard LXE API are and are not supported on the MX5. It is intended as an appendix to the standard Microsoft Windows CE .NET API documentation. The APIs detailed in the Programming Guide are included in the file LXEAPI.DLL..

These LXE specific API calls and registry settings cover the following:

- Battery
- PCMCIA
- Power Management
- Scanner
- Serial Ports
- Version Control
- Miscellaneous

Chapter 4 AppLock

Introduction

LXE's AppLock is designed to be run on LXE certified Microsoft Windows mobile devices only. LXE installs the program as part of the factory-installation process.

A mobile device running AppLock becomes a dedicated, single application device. In other words, only the application or feature specified in the AppLock configuration by the Administrator is available to the user.

AppLock also contains a component which sets configuration parameters as specified by the Administrator.

When the mobile device is reset to factory default values, the Administrator may need to reconfigure the AppLock application.

Setup a New Device

LXE devices with the AppLock feature are shipped to boot in Administration mode with no default password, thus when the device is first booted, the user has full access to the device and no password prompt is displayed. After the administrator specifies an application to lock, a password is assigned and the device is rebooted or the hotkey is pressed, the device switches to end-user mode.

Briefly, the process to configure a new device is as follows:

1. Insert a fully charged battery and press the Power button.
2. Connect an external power source to the device (if required).
3. Adjust screen display, audio volume and other parameters if desired. Install accessories (e.g. handstrap, stylus).
4. Tap **Settings | System | Administration** icon.
5. Assign an application on the Control tab screen.
6. Assign a password on the Security tab screen.
7. Select a view level on the Status tab screen, if desired.
8. Tap OK
9. Press the hotkey sequence to launch AppLock and lock the configured application.
10. The device is now in end-user mode.

Note: LXE has made the assumption, in this appendix, that the first user to power up a new mobile device is the system administrator.

Troubleshooting

Can't align the screen, change the date/time or adjust the volume.	AppLock is installed and running on the mobile device. AppLock restricts access to the control panels. Log in to the mobile device using the AppLock administrator password.
AppLock logging capturing messages for debug purposes on this device created an overly large registry Temp file.	Disable the AppLock logging feature by either: 1. Start / Settings / Control Panel / Administrator Control / Status tab. Change Log Level to "none". Tap OK at the top of the dialog box. Perform a RegSave function. 2. Delete the REGTEMP.REG file. Perform a RegSave function. Cold Reset the mobile device. A "clean" REGTEMP.REG file will be created as a byproduct of the Cold Reset process.

Administration Mode

Administration mode gives full access to the device and configuration options.

The administrator must enter a valid password (when a password has already been assigned) before access to Administration mode and configuration options are allowed. The administrator can configure the following options:

1. Create/change the keystroke sequence to activate administrator access.
2. Create/change the password for administrator access.
3. Assign the name of the application to lock.
4. Select the command line of the application to lock.

In addition to these configuration options, the administrator can view and manage the status logs of AppLock sessions.

Administrator default values for this device:

Administrator Hotkey	Shift+Ctrl+A
Password	none
Application path and name	none
Application command line	none

End User Mode

End-user mode locks the end-user into the configured application. The end user can still reboot and respond to dialog boxes. The single application is automatically launched, and runs in full screen mode, when the device boots up.

The user cannot unintentionally or intentionally exit the application nor can the end user execute any other applications. Normal application exit or switching methods and all Microsoft defined Windows CE .NET key combinations, such as close (X) icon, File Exit, File Close, Alt-F4, Alt-Tab, etc. are disabled. The Windows CE .NET desktop icons, menu bars, task bar and system trays are not visible or accessible. Task Manager is not available.

If the end-user selects File/Exit or Close from the applications menu bar, the menu is cleared and nothing else happens; the application remains active. Nothing happens when the end-user clicks on the Close icon on the application's title bar and the application remains active.

Note: A few applications do not follow normal procedures when closing. AppLock cannot prevent this type of application from closing, but is notified that the application has closed. For these applications, AppLock immediately restarts the application which causes the screen to flicker. If this type of application is being locked, the administrator should close all other applications before switching to end user mode to minimize the screen flicker.

Windows accelerator keys such as Alt-F4 are disabled.

Administration and Configuration

The default Administrator Hotkey sequence is **Shift+Ctrl+A.**

Administrator mode allows access to all features on the device. When the hotkey is pressed to switch into Administrator mode, a password prompt is displayed (if a password has been configured). A password must be entered within 30 seconds (and within three tries) or the password prompt is removed and the device remains in end-user mode with the focus returned to the locked application. Without entry of a valid password, the switch into Administrator mode will not occur.

Configuration

Access: **Settings | Control Panel | Administration icon**

The password prompt is displayed if a password has been configured. When the valid password is entered, the Administration Control panel is displayed. When a valid password is not entered within 30 seconds, the user is returned to the System Control Panel.

If a password has not been configured, the Administrator Control panel is displayed.

Control Panel

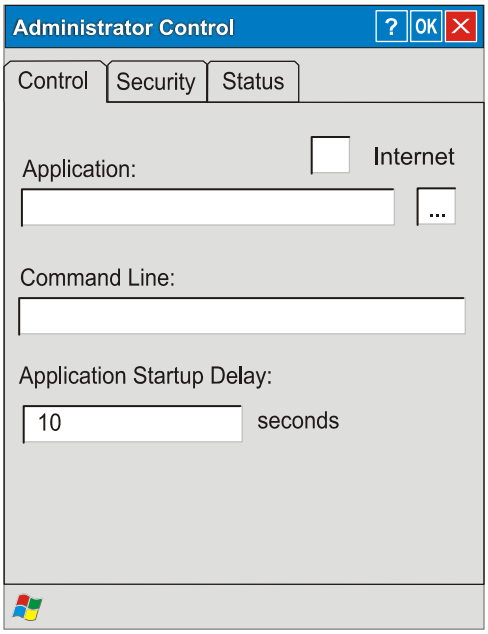


Figure 4-1 Administrator Control Panel

Use the Control tab options to select the application to launch when the device boots up.

Move the cursor to the Application text box and either type the application path or click the Browse button (the … button). The standard Windows CE .NET Browse dialog is displayed. After selecting the application from the Browse dialog, tap OK.

Enter the command line parameters for the application in the Command Line text box.

Enter the number of seconds the selected Application must wait before starting to run upon reboot.

If no application is specified when the Administrator Control panel is closed, the device reboots into Administrator mode. If a password has been set, but the application has not been specified, the user will be prompted for the password before entering administration mode. The password prompt remains on the display until a valid password is entered.

End User Internet Explorer

AppLock supports applications that utilize Internet Explorer, such as .HTML pages and JAVA applications. The end user can run an application by entering the application name and path in Internet Explorer's address bar.

To prevent the end user from executing an application using this method, the address bar and Options settings dialog are restricted in Internet Explorer. This is accomplished by creating an Internet Explorer that is used in end user mode, End-user Internet Explorer (EUIE). The EUIE executes the Internet Explorer application in full screen mode which removes the address bar and status bar. The Options Dialog is also removed so the end user cannot re-enable the address bar.

The administrator specifies the EUIE by simply checking the "Internet" checkbox in the Control tab of the Administrator applet. The internet application should then be entered in the "Application" text box. If the standard Internet Explorer that is shipped with the device is desired, it should be treated like any other application. This means that IEXPLORER.EXE should be specified in the Application text box and the internet application should be entered in the command line. In this case, do not check the Internet checkbox.

Security Panel

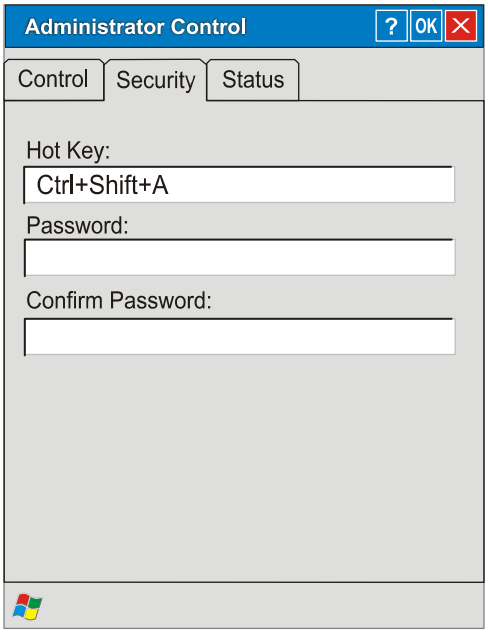


Figure 4-2 Administrator Security Panel

Hotkey

Specify the hotkey sequence that triggers AppLock to switch between administrator and user modes and the password required to enter Administrator mode. The default hotkey sequence is **Shift+Ctrl+A**.

A 2nd key keypress is an invalid keypress for a hotkey sequence.

Move the cursor to the Hot Key text box. Enter the new hot key sequence by first pressing the Shift state key followed by a normal key. The hotkey selected must be a key sequence that the application being locked does not use. The hotkey sequence is intercepted by AppLock and is not passed to the application.

Input from the keyboard or Input Panel is accepted with the restriction that the normal key must be pressed from the keyboard when switching modes. The hotkey sequence is displayed in the Hot key text box with “Shift”, “Alt”, and “Ctrl” text strings representing the shift state keys. The normal keyboard key completes the hotkey sequence.

For example, if the ‘Ctrl’ key is pressed followed by ‘A’, “Ctrl+A” is entered in the text box. If another key is pressed after a normal key press, the hotkey sequence is cleared and a new hotkey sequence is started.

A normal key is required for the hotkey sequence and is unlike pressing the normal key during a mode switch; this key can be entered from the SIP when configuring the key. However, when the hotkey is pressed to switch modes, the normal key must be entered from the keypad; it cannot be entered from the SIP.

Password

Move the cursor to the Password text box. The passwords entered in the Password and Confirm Password fields must match. Passwords are case sensitive.

When the user exits the Administrator Control panel, the two passwords are compared to verify that they match. If they do not match, a dialog box is displayed notifying the user of the error. After the user closes the dialog box, the Security Panel is displayed and the password can then be entered and confirmed again. If the passwords match, the password is encrypted and saved.

See Also: Passwords

Status Panel

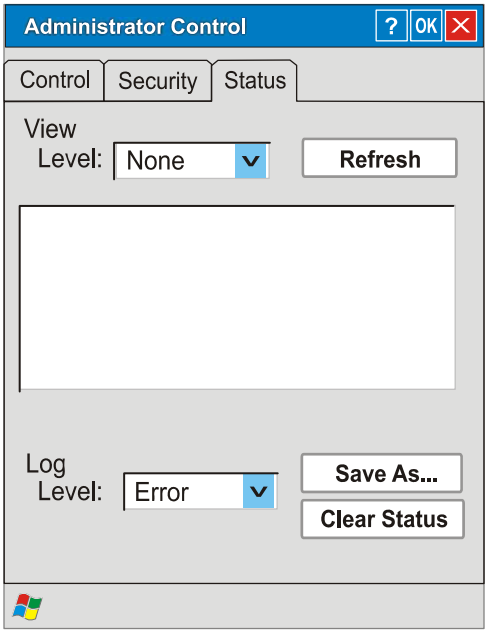


Figure 4-3 Administrator Status Panel

Use the Status panel to view the log of previous AppLock operation and to configure which messages are to be recorded during AppLock operation.

As the status information is stored in the registry and accumulates during AppLock configuration and operation, it is very important that the administrator periodically clear the status information to reduce the amount of registry space used. For this reason, the administrator can configure the type of status information that is logged, as well as clear the status information.

View

Error	Error status messages are logged when an error occurs and is intended to be used by the administrator to determine why the specified application cannot be locked.
Process	Processing status shows the flow control of AppLock components and is mainly intended for LXE Customer Service when helping users troubleshoot problems with their AppLock program.
Extended	Extended status provides more detailed information than that logged by Process Logging.
All	All messages are displayed.

Tap the Refresh button after changing from one view level to another. The filtered records are displayed, all others are not displayed.

Levels

Note: ***If a level higher than Error is selected, the status should be cleared frequently by the administrator.***

In addition to the three view levels the administrator can select that all status information be logged or turn off all status information logging completely. The system default is Error Logging; however to reduce registry use, the administrator may want to select 'None' after verifying the configuration. Tap the Clear button to clear the status information from the registry.

- None
- Error
- Processing
- Extended
- All

Save As

When the 'Save As'… button is selected, a standard 'Save As' dialog screen is displayed. Specify the path and filename. If the filename exists, the user is prompted whether the file should be overwritten. If the file does not exist, it is created.

See Also: Error Messages

Passwords

A password must be configured. If the password is not configured, a new device switches into Administration mode without prompting for a password. In addition to the hotkey press, a mode switch occurs if inaccurate information has been configured or if mandatory information is missing in the configuration.

There are several situations that display a password prompt after a password has been configured.

If the configured hotkey is pressed, the password prompt is displayed. In this case the user has 30 seconds to enter a password. If a valid password is not entered within 30 seconds, the password prompt is dismissed and the device returns to end-user mode.

All other situations that present the password prompt do not dismiss the prompt -- this is because the other situations result in invalid end-user operation.

These conditions include:

1. If inaccurate configuration information is entered by the administrator, i.e. an application is specified that does not exist.
2. If the application name, which is mandatory for end-user mode, is missing in the configuration.
3. Invalid installation of AppLock (e.g. missing DLLs).
4. Corrupted registry settings.

To summarize, if an error occurs that prevents AppLock from switching to user mode, the password will not timeout and AppLock will wait until the correct password is entered.

Troubleshooting

Forgotten the password that has been set? Enter this LXE back door key sequence:

Ctrl+L Ctrl+X Ctrl+E

Error Messages

Any messages whose first word is an 'ing' word is output prior to the action described in the message. For example, "Switching to admin-hotkey press" is logged after the administrator has pressed the hotkey but prior to starting the switch process.

For all operations that can result in an error, an Error level message is displayed when a failure occurs. These messages contain the word "failure". These messages have a partner Extended level message that is logged which contains the word "OK" if the action completed successfully rather than with an error.

For processing level messages, "Enter…" is logged at the beginning of the function specified in the message and "Exit…" is logged at the end (just before the return) of the function specified in the message.

Message	Explanation and/or corrective action	Level
Error reading hotkey	The hotkey is read but not required by AppLock.	LOG_EX
Error reading hotkey; using default	A hotkey is required. If there is a failure reading the hotkey, the internal factory default is used.	LOG_ERROR
App Command Line= <Command line>	Command line of the application being locked	LOG_PROCESSING
App= <Application name>	Name of the application being locked	LOG_PROCESSING
dwProcessID= <#>	Device ID of the application being locked	LOG_EX
Encrypt exported key len <#>	Size of encrypt export key	LOG_EX
Encrypt password length= <#>	The length of the encrypted password.	LOG_EX
Encrypted data len <#>	Length of the encrypted password	LOG_EX
hProcess= <#>	Handle of the application being locked	LOG_EX
Key pressed = <#>	A key has been pressed and trapped by the hotkey processing.	LOG_EX
**********	The status information is being saved to a file and the file has been opened successfully.	LOG_EX
Address of keyboard hook procedure failure	Applock found the kbdhook.dll, but was unable to get the address of the initialization procedure. For some reason the dll is corrupted. Look in the \Windows directory for kbdhook.dll. If it exists, delete it. Also delete applock.exe from the \Windows directory and reboot the unit. Deleting applock.exe triggers the applock system to reload.	LOG_ERROR
Address of keyboard hook procedure OK	Applock successfully retrieved the address of the keyboard filter initialization procedure.	LOG_EX

Message	Explanation and/or corrective action	Level
Alt pressed	The Alt key has been pressed and trapped by the HotKey processing.	LOG_EX
Alt	Processing the hotkey and backdoor entry	LOG_EX
Application handle search failure	The application being locked did not complete initialization.	LOG_ERROR
Application handle search OK	The application initialized itself successfully	LOG_ERROR
Application load failure	The application could not be launched by AppLock; the application could not be found or is corrupted.	LOG_ERROR
Backdoor message received	The backdoor keys have been pressed. The backdoor hotkeys provide a method for customer service to get a user back into their system without editing the registry or reloading the device.	LOG_PROCESSING
Cannot find kbdhook.dll	The load of the keyboard filter failed. This occurs when the dll is missing or is corrupted. Look in the \Windows directory for kbdhook.dll. If it exists, delete it. Also delete applock.exe from the \Windows directory and reboot the unit. Deleting applock.exe triggers the applock system to reload.	LOG_ERROR
Converted Pwd	Converted password from wide to mbs.	LOG_EX
Could not create event EVT_HOTKEYCHG	The keyboard filter uses this event at the Administrator Control panel. The event could not be created.	LOG_ERROR
Could not hook keyboard	If the keyboard cannot be controlled, AppLock cannot process the hotkey. This failure prevents a mode switch into user mode.	LOG_ERROR
Could not start thread HotKeyMon	The keyboard filter must watch for hot key changes. The watch process could not be initiated.	LOG_ERROR
Ctrl after L or X	Processing the backdoor entry.	LOG_EX
Ctrl pressed	The Ctrl key has been pressed and trapped by the HotKey processing.	LOG_EX
Ctrl	Processing the hotkey and backdoor entry.	LOG_EX
Decrypt acquire context failure	Unable to decrypt password.	LOG_ERROR
Decrypt acquired context OK	Decryption process ok.	LOG_EX
Decrypt create hash failure	Unable to decrypt password.	LOG_ERROR
Decrypt created hash OK	Decryption process ok.	LOG_EX
Decrypt failure	Unable to decrypt password.	LOG_ERROR

Message	Explanation and/or corrective action	Level
Decrypt import key failure	Unable to decrypt password.	LOG_ERROR
Decrypt imported key OK	Decryption process ok.	LOG_EX
Encrypt acquire context failure	Unable to encrypt password.	LOG_ERROR
Encrypt acquire encrypt context failure	Unable to encrypt password.	LOG_ERROR
Encrypt acquired encrypt context OK	Encrypt password process successful.	LOG_EX
Encrypt create hash failure	Unable to encrypt password.	LOG_ERROR
Encrypt create key failure	Unable to encrypt password.	LOG_ERROR
Encrypt created encrypt hash OK	Encrypt password process successful.	LOG_EX
Encrypt export key failure	Unable to encrypt password.	LOG_ERROR
Encrypt export key length failure	Unable to encrypt password.	LOG_ERROR
Encrypt exported key OK	Encrypt password process successful.	LOG_EX
Encrypt failure	The password encryption failed.	LOG_ERROR
Encrypt gen key failure	Unable to encrypt password.	LOG_ERROR
Encrypt generate key failure	Unable to encrypt password.	LOG_ERROR
Encrypt get user key failure	Unable to encrypt password.	LOG_ERROR
Encrypt get user key ok	Encrypt password process successful.	LOG_EX
Encrypt hash data failure	Unable to encrypt password.	LOG_ERROR
Encrypt hash data from pwd OK	Encrypt password process successful.	LOG_EX
Encrypt length failure	Unable to encrypt password.	LOG_ERROR
Encrypt out of memory for key	Unable to encrypt password.	LOG_ERROR
Encrypted data OK	The password has been successfully encrypted.	LOG_EX
Enter AppLockEnumWindows	In order for AppLock to control the application being locked so it can prevent the application from exiting, AppLock launches the application and has to wait until it has created and initialized its main window. This message is logged when the function that waits for the application initialization is entered.	LOG_EX
Enter DecryptPwd	Entering the password decryption process.	LOG_PROCESSING

Message	Explanation and/or corrective action	Level
Enter EncryptPwd	Entering the password encryption processing.	LOG_PROCESSING
Enter FullScreenMode	Entering the function that switches the screen mode. In full screen mode, the taskbar is hidden and disabled.	LOG_PROCESSING
Enter GetAppInfo	Processing is at the beginning of the function that retrieves the application information from the registry.	LOG_PROCESSING
Enter password dialog	Entering the password dialog processing.	LOG_PROCESSING
Enter password timeout	Entering the password timeout processing.	LOG_PROCESSING
Enter restart app timer	Some application shut down before AppLock can stop it. In these cases, AppLock gets notification of the exit. When the notification is received, AppLock starts a timer to restart the application. This message logs that the timer has expired and the processing is at the beginning of the timer function.	LOG_PROCESSING
Enter TaskbarScreenMode	Entering the function that switches the screen to non-full screen mode and enable the taskbar.	LOG_PROCESSING
Enter ToAdmin	Entering the function that handles a mode switch into admin mode.	LOG_PROCESSING
Enter ToUser	Entering the function that handles the mode switch to user mode	LOG_PROCESSING
Enter verify password	Entering the password verification processing.	LOG_PROCESSING
Exit AppLockEnumWindows-Found	There are two exit paths from the enumeration function. This message denotes the enumeration function found the application.	LOG_PROCESSING
Exit AppLockEnumWindows-Not found	There are two exit paths from the enumeration function. This message denotes the enumeration function did not find the application.	LOG_PROCESSING
Exit DecryptPwd	Exiting password decryption processing.	LOG_PROCESSING
Exit EncryptPwd	Exiting password encryption processing.	LOG_PROCESSING
Exit FullScreenMode	Exiting the function that switches the screen to full screen.	LOG_PROCESSING
Exit GetAppInfo	Processing is at the end of the function that retrieved the application information from the registry.	LOG_PROCESSING
Exit password dialog	Exiting password prompt processing.	LOG_PROCESSING
Exit password dialog-cancel	Exiting password prompt w/cancel.	LOG_PROCESSING
Exit password dialog-OK	Exiting password prompt successfully.	LOG_PROCESSING

Message	Explanation and/or corrective action	Level
Exit password timeout	Exiting password timeout processing.	LOG_PROCESSING
Exit restart app timer	Processing is at the end of the timer function	LOG_PROCESSING
Exit TaskbarScreenMode	Exiting the function that switches the screen mode back to normal operation for the administrator.	LOG_PROCESSING
Exit ToAdmin	Exiting the function that handles the mode switch into admin mode.	LOG_PROCESSING
Exit ToUser	Exiting the user mode switch function.	LOG_PROCESSING
Exit ToUser-Registry read failure	The AppName value does not exist in the registry so user mode cannot be entered.	LOG_PROCESSING
Exit verify password-no pwd set	Exiting password verification.	LOG_PROCESSING
Exit verify password-response from dialog	Exiting password verification.	LOG_PROCESSING
Found taskbar	The handle to the taskbar has been found so that AppLock can disable it in user mode.	LOG_PROCESSING
Getting address of keyboard hook init procedure	AppLock is retrieving the address of the keyboard hook.	LOG_PROCESSING
Getting configuration from registry	The AppLock configuration is being read from the registry. This occurs at initialization and also at entry into user mode. The registry must be re-read at entry into user mode in case the administration changed the settings of the application being controlled.	LOG_PROCESSING
Getting encrypt pwd length	The length of the encrypted password is being calculated.	LOG_EX
Hook wndproc failure	AppLock is unable to lock the application. This could happen if the application being locked encountered an error after performing its initialization and shut itself down prior to being locked by AppLock.	LOG_ERROR
Hook wndproc of open app failure	The application is open, but AppLock cannot lock it.	LOG_ERROR
Hot key event creation failure	The Admin applet is unable to create the hotkey notification.	LOG_ERROR
Hot key pressed	Processing the hotkey and backdoor entry	LOG_EX
Hot key pressed	Processing the hotkey and backdoor entry	LOG_EX
Hot key set event failure	When the administrator changes the hotkey configuration the hotkey controller must be notified. This notification failed.	LOG_ERROR
Hotkey press message received	The user just pressed the configured hotkey.	LOG_PROCESSING

Message	Explanation and/or corrective action	Level
In app hook:WM_SIZE	In addition to preventing the locked application from exiting, AppLock must also prevent the application from enabling the taskbar and resizing the application's window. This message traps a change in the window size and corrects it.	LOG_EX
In app hook:WM_WINDOWPOSCHANGED	In addition to preventing the locked application from exiting, AppLock must also prevent the application from enabling the taskbar and resizing the application's window. This message traps a change in the window position and corrects it.	LOG_EX
Initializing keyboard hook procedure	Applock is calling the keyboard hook initialization.	LOG_PROCESSING
Keyboard hook initialization failure	The keyboard filter initialization failed.	LOG_ERROR
Keyboard hook loaded OK	The keyboard hook dll exists and loaded successfully.	LOG_EX
L after Ctrl	Processing the backdoor entry.	LOG_EX
Loading keyboard hook	When Applock first loads, it loads a dll that contains the keyboard hook processing. This message is logged prior to the load attempt.	LOG_PROCESSING
Open failure	The status information is being saved to a file and the file open has failed. This could occur if the file is write protected. If the file does not exist, it is created.	LOG_ERROR
Open registry failure	If the Administration registry key does not exist, the switch to user mode fails because the AppName value in the Administration key is not available.	LOG_ERROR
Opened status file	The status information is being saved to a file and the file has been opened successfully.	LOG_EX
Out of memory for encrypted pwd	Not enough memory to encrypt the password.	LOG_ERROR
pRealTaskbarWndProc already set	The taskbar control has already been installed.	LOG_EX
Pwd cancelled or invalid-remain in user mode	The password prompt was cancelled by the user or the maximum number of failed attempts to enter a password was exceeded.	LOG_EX
Read registry error-hot key	The hotkey registry entry is missing or empty. This is not considered an error. The keyboard hook uses an embedded default if the value is not set in the registry.	LOG_ERROR
Read registry failure-app name	AppName registry value does not exist or is empty. This constitutes a failure for switching into user mode.	LOG_ERROR

Message	Explanation and/or corrective action	Level
Read registry failure-Cmd Line	AppCommandLine registry entry is missing or empty. This is not considered an error since command line information is not necessary to launch and lock the application.	LOG_ERROR
Read registry failure-Internet	The Internet registry entry is missing or empty. This is not considered an error since the Internet value is not necessary to launch and lock the application.	LOG_ERROR
Registering Backdoor MSG	The AppLock system communicates with the keyboard hook via a user defined message. Both AppLock.exe and Kbdhook.dll register the message at initialization.	LOG_PROCESSING
Registering Hotkey MSG	The applock system communicates with the keyboard hook via a user defined message. Both Applock.exe and Kbdhook.dll register the message at initialization.	LOG_PROCESSING
Registry read failure at reenter user mode	The registry has to be read when entering user mode is the AppName is missing. This user mode entry is attempted at boot and after a hotkey switch when the administrator has closed the application being locked or has changed the the application name or command line.	LOG_ERROR
Registry read failure at reenter user mode	The registry has to be read when switching into user mode. This is because the administrator can change the settings during administration mode. The read of the registry failed which means the Administration key was not found or the AppName value was missing or empty.	LOG_ERROR
Registry read failure	The registry read failed. The registry information read when this message is logged is the application information. It the Adminstration key cannot be opened or if the AppName value is missing or empty, this error is logged. The other application information is not required. If the AppName value is not available, AppLock cannot switch into user mode.	LOG_ERROR
Reset system work area failure	The system work area is adjusted when in user mode to cover the taskbar area. The system work area has to be adjusted to exclude the taskbar area in administration mode. AppLock was unable to adjust this area.	LOG_ERROR
Shift pressed	The Shift key has been pressed and trapped by the HotKey processing.	LOG_EX
Shift	Processing the hotkey and backdoor entry	LOG_EX
Show taskbar	The taskbar is now being made visible and enabled.	LOG_PROCESSING
Switching to admin-backdoor	The system is currently in user mode and is now switching to admin mode. The switch occurred because of the backdoor key presses were entered by the administrator.	LOG_PROCESSING

Message	Explanation and/or corrective action	Level
Switching to admin-hotkey press	The system is currently in user mode and is now switching to admin mode. The switch occurred because of a hotkey press by the administrator.	LOG_PROCESSING
Switching to admin-kbdhook.dll not found	The keyboard hook load failed, so Applock switches to admin mode. If a password is specified, the password prompt is displayed and remains until a valid password is entered.	LOG_PROCESSING
Switching to admin-keyboard hook initialization failure	If the keyboard hook initialization fails, Applock switches to admin mode. . If a password is specified, the password prompt is displayed and remains until a valid password is entered.	LOG_PROCESSING
Switching to admin-registry read failure	See the explanation of the "Registry read failure" above. AppLock is switching into Admin mode. If a password has been configured, the prompt will be displayed and will not be dismissed until a valid password is entered.	LOG_PROCESSING
Switching to TaskbarScreenMode	In administration mode, the taskbar is visible and enabled.	LOG_EX
Switching to user mode	The registry was successfully read and AppLock is starting the process to switch to user mode.	LOG_PROCESSING
Switching to user-hotkey press	The system is currently in admin mode and is now switching to user mode. The switch occurred because of a hotkey press by the administrator.	LOG_PROCESSING
Taskbar hook failure	Applock is unable to control the taskbar to prevent the locked application from re-enabling it.	LOG_ERROR
Taskbar hook OK	AppLock successfully installed control of the taskbar.	LOG_EX
Timeout looking for app window	After the application is launched, AppLock must wait until the application has initialized itself before proceeding. The application did not start successfully and Applock has timed out.	LOG_ERROR
ToUser after admin, not at boot	The user mode switch is attempted when the device boots and after the administrator presses the hotkey. The mode switch is being attempted after a hotkey press.	LOG_EX
ToUser after admin-app still open	The switch to user mode is being made via a hotkey press and the administrator has left the application open and has not made any changes in the configuration.	LOG_EX
ToUser after admin-no app or cmd line change	If user mode is being entered via a hotkey press, the administrator may have left the configured application open. If so, AppLock does not launch the application again unless a new application or command line has been specified; otherwise, it just locks it.	LOG_EX

Message	Explanation and/or corrective action	Level
Unable to move desktop	The desktop is moved when switching into user mode. This prevents them from being visible if the application is exited and restarted by the timer. This error does not affect the screen mode switch; processing continues.	LOG_ERROR
Unable to move taskbar	The taskbar is moved when switching into user mode. This prevents them from being visible if the application is exited and restarted by the timer. This error does not affect the screen mode switch; processing continues.	LOG_ERROR
Unhook taskbar wndproc failure	AppLock could not remove its control of the taskbar. This error does not affect AppLock processing	LOG_ERROR
Unhook wndproc failure	AppLock could not remove the hook that allows monitoring of the application.	LOG_ERROR
Unhooking taskbar	In administration mode, the taskbar should return to normal operation, so AppLock's control of the taskbar should be removed.	LOG_EX
Unhooking wndproc	When the administrator leaves user mode, the device is fully operational; therefore, AppLock must stop monitoring the locked application.	LOG_EX
WM_SIZE adjusted	This message denotes that AppLock has readjusted the window size.	LOG_EX
X after Ctrl+L	Processing the backdoor entry.	LOG_EX
Ret from password <#>	Return value from password dialog.	LOG_EX
Decrypt data len <#>	Length of decrypted password.	LOG_EX
Window handle to enumwindows=%x	The window handle that is passed to the enumeration function. This message can be used by engineering with other development tools to trouble shoot application lock failures.	LOG_EX
WM_WINDOWPOSCHG adjusted=%x	Output the window size after it has been adjusted by AppLock	LOG_EX

AppLock Registry Settings

This system application runs at startup via the "launch" feature of LXE Windows CE .NET devices. When the launch feature is installed on the device, the following registry settings are created. The launch feature registry settings are embedded in the mobile device OS image:

```
HKEY_LOCAL_MACHINE\\Software\\LXE\\Persist\\Filename=AppLock.exe
HKEY_LOCAL_MACHINE\\Software\\LXE\\Persist\\Installed=
HKEY_LOCAL_MACHINE\\Software\\LXE\\Persist\\FileCheck=
```

AppLock registry settings identify the application that is going to be locked and any parameters that are needed by the application. These registry settings are as follows:

```
HKEY_LOCAL_MACHINE\\Software\\LXE\\Administration\\AppName
HKEY_LOCAL_MACHINE\\Software\\LXE\\AppCommandLine=
```

In addition to the registry settings needed to specify the application, additional registry settings are needed to store the configuration options for AppLock. These options include, among others, the administrator's password and hotkey.

```
HKEY_LOCAL_MACHINE\\Software\\LXE\\AppLock\\Administration\\HotKey=
HKEY_LOCAL_MACHINE\\Software\\LXE\\AppLock\\Administration\\EP=
```

Appendix A Key Maps

Keypad

ANSI / Batch Keypad

Remember :

The Orange (on the left) and Blue (on the right) keys are "2nd function" keys.

Ctrl, Alt, Shft, Blue and Orange keys are modifier keys or "sticky keys". They do not need to be held down before pressing the next (or desired) key. You can use combined modifiers on specific keys.

When using this keypad with LXE's terminal emulations, please refer to the Key Maps appendix in the Terminal Emulation manuals.

Key Map 101-Key Equivalencies

Note: This key mapping is used on hand held computers that are NOT running an LXE Terminal Emulator.

When using a sequence of keys that includes the Orange or Blue keys, press the color key first then the rest of the key sequence.

Alphabetic keys default to lower case letters. Press the Shft key, then the alphabetic key for an uppercase letter.

Note: When the computer boots, the default condition of Caps (or CapsLock) is Off. The Caps (or CapsLock) condition can be toggled with Blue plus Tab key sequence.

To Get This Key / Function	Press These Keys and Then …						Press This Key
	Blue	Orange	Ctrl	Alt	Shft	Caps Lock	
Power / Suspend							Power
Volume Adjust	x						V
Backlight Toggle for Display and Keypad	x						Right Scan Key
Adjust Backlight Brightness Down[4]		x					7
Blue Mode							Blue
Orange Mode							Orange
Shift							Shft
Alt							Alt
Ctrl							Ctrl
Scan (programmed as)							Left Scan Key or Right Scan Key
Esc	x						Alt
Space							Spc
Enter							Enter
CapsLock (Toggle)	x						Tab
Back Space		x					Spc
Tab							Tab
BackTab		x					Tab
Break	x						B
Pause	x						P
Print Screen	x						R
Scroll Lock	x						S

[4] Backlight must be toggled On. Once the backlight is off, the Blue key / Right Scan key sequence toggles the backlight on and at it's brightest intensity.

To Get This Key / Function	Press These Keys and Then …						Press This Key
	Blue	Orange	Ctrl	Alt	Shft	Caps Lock	
Up Arrow							Up Arrow
Down Arrow							Down Arrow
Right Arrow							Right Arrow
Left Arrow							Left Arrow
Insert	x						I
Delete		x					DOT
Home		x					Left Arrow
End		x					Right Arrow
Page Up		x					Up Arrow
Page Down		x					Down Arrow
F1		x					1
F2		x					2
F3		x					3
F4		x					4
F5		x					5
F6		x					6
F7		x					7
F8		x					8
F9		x					9
F10		x					0
F11	x						1
F12	x						2
F11	x						1
F12	x						2
F13	x						3
F14	x						4
F15	x						5
F16	x						6
F17	x						7
F18	x						8
F19	x						9
F20	x						0
F21		x			x		1
F22		x			x		2

To Get This Key / Function	Press These Keys and Then …						Press This Key
	Blue	Orange	Ctrl	Alt	Shft	Caps Lock	
F23		x			x		3
F24		x			x		4
a							A
b							B
c							C
d							D
e							E
f							F
g							G
h							H
i							I
j							J
k							K
l							L
m							M
n							N
o							O
p							P
q							Q
r							R
s							S
t							T
u							U
v							V
w							W
x							X
y							Y
z							Z
A					x		A
B					x		B
C					x		C
D					x		D
E					x		E
F					x		F

To Get This Key / Function	Press These Keys and Then …						Press This Key
	Blue	Orange	Ctrl	Alt	Shft	Caps Lock	
G					x		G
H					x		H
I					x		I
J					x		J
K					x		K
L					x		L
M					x		M
N					x		N
O					x		O
P					x		P
Q					x		Q
R					x		R
S					x		S
T					x		T
U					x		U
V					x		V
W					x		W
X					x		X
Y					x		Y
Z					x		Z
1							1
2							2
3							3
4							4
5							5
6							6
7							7
8							8
9							9
0							0
. (DOT)							DOT
<	x						G
[	x						Y
]	x						Z

To Get This Key / Function	Press These Keys and Then …						Press This Key
	Blue	Orange	Ctrl	Alt	Shft	Caps Lock	
>	x						H
=	x						T
{	x						W
}	x						X
/	x						J
-	x						Spc
+	x						DOT
*		x					I
: (colon)		x					D
; (semicolon)		x					F
. (period)		x					K
?		x					L
`		x					N
_ (underscore)		x					M
, (comma)		x					J
‘ (apostrophe)		x					H
~ (tilde)		x					B
\		x					S
|		x					A
“		x					G
!		x					Q
@		x					W
#		x					E
$		x					R
%		x					T
^		x					Y
&		x					U
(		x					O
)		x					P

3270 Keypad

3270 Keypad

When using this keypad with LXE's TN3270 terminal emulation, please refer to the Key Maps appendix in the Terminal Emulation manual.

5250 Keypad

5250 Keypad

When using this keypad with LXE's TN5250 terminal emulation, please refer to the Key Maps appendix in the Terminal Emulation manual.

Appendix B Technical Specifications

Physical Specifications

Features		Specifications	Comments	
CPU		SA1110 CPU operating at 206 MHz	32 bit CPU (with on-chip cache)	
Memory	ROM RAM	32 MB Flash 64 MB of SDRAM	 System Memory	
Display	LCD	Transflective Color	Transflective LCD with touchscreen. Customer Configurable Backlighting	
Mass Storage	Removable PC Card (Customer Installable)	ATA Flash Type II PC Cards (Various Sizes)	Compact Flash Card ATA Flash PC Card, or ATA Hard Drive PC Card	
PCMCIA Interface		One PCMCIA Slot: Slot 0 accepts Type II Slot 1 accepts Type I and II CF+	Compatible with the PCMCIA version 2.1 standard.	
Weights		Unit with radio, battery and scanner endcap	Less than 30 oz	>850g
		Battery	6.4 oz	180 g
		Radio Card - 2.4GHz Type II	1.0 oz 1.6 oz	28g 45g
		Compact Flash Card	1 oz	28g
External Connectors/Interface		IrDA Connector (COM 3) bi-directional half-duplex	Supports 115k baud	
		RS-232 COM1 mini D serial port (left)	26 Position “D” (female) Connector. Provides connection to external devices such as a powered cradle, printer, USB cable, AC power supply cable.	
		RS-232 COM4 mini D serial port (right)	26 Position “D” (female) Connector. Provides connection to external devices such as a powered cradle, printer, AC power supply cable.	

Features		Specifications	Comments	
Audio/Microphone Connector			Audio Jack	
Dimensions		Length	9.6”	24.3 cm
		Width	4”	10.1 cm
		Depth	2.1”	5.4 cm
Scanner		SE1223, SE2223 scan engine	Integrated	
Batteries	Main	Li-Ion battery pack 7.4V 2.8Ah	In-Unit Chargeable or Externally Chargeable	
	Backup (CMOS)	Internal Nickel Metal Hydride (NiMH) 5.7V max.	Automatically charges from Main Battery during normal operation Memory operational for 48 hours when Main Battery is depleted	

Display Specifications

Feature	Specification
Type	LCD - Transflective Color CCFL Front Light
Resolution	320x240 pixels
Size	1/4 VGA portrait
Diagonal Viewing Area	3.8 in (150.4mm)
Dot Pitch	0.22mm
Dot Size	0.20mm x 0.20mm
Color Scale	Reflective – 256 colors

Environmental Specifications

MX5

Feature	Specification
Operating Temperature	-4°F to 140°F (-20°C to 60°C)
Storage Temperature	-22°F to 158°F (-30°C to 70°C)
Water and Dust	IP67
Operating Humidity	Up to 90% non-condensing at 104°F (40°C)
Standards	See “MX5 User’s Guide”, Appendix B.
Contamination	Resistant to exposure to skin oil and other lubricants.
Vibration	Based on MIL Std 810D
ESD	8 KV air, 4kV direct contact
Shock	Multiple 2 meter (6.6’) drops to concrete.

AC Wall Adapter

Feature	Specification
Input Power Switch	None
Power "ON" Indicator	LED
Input Fusing	Thermal Fuse
Input Voltage	100VAC min – 240 VAC max
Input Frequency	50 - 60 Hz
Input Connector	North American wall plug, no ground
Output Connector	26 position D serial interface
Output Voltage	+12VDC, unregulated
Output Current	0 Amps min, 3.75 A max
Operating Temperature	32° F to 104° F / 0° C to 40° C
Storage Temperature	-13° F to 158° F / -25° C to 70° C
Humidity	Operates in a relative humidity of 5 – 95% (non-condensing)

Radio Specifications

PCMCIA Symbol 11Mb 2.4GHz Type II

Bus Interface:	PCMCIA 2.0, Type II slot
Radio Frequencies:	2.4 - 2.5 GHz IEEE 802.11b DS SS
RF Data Rates:	11 Mbps maximum
RF Power Level:	100 mW
Channels	11 US, 13 Europe, 4 France, 1 Japan
Operating Temperature	see MX5 Environmental Specs
Storage Temperature	see MX5 Environmental Specs
Connectivity:	TCP/IP, Ethernet, NDSI

PCMCIA Lucent 2.4 GHz Type II

Bus Interface	PCMCIA 2.0, Type II slot
Radio Frequencies	2.4 - 2.4835 GHz IEEE 802.11b DS SS
RF Data Rates	11 Mbps
RF Power Level	100 mW nominal (varies by country)
Channels	11 US, 13 Europe, 4 France, 1 Japan
Operating Temperature	see MX5 Environmental Specs
Storage Temperature	see MX5 Environmental Specs
Connectivity	NDIS, TCP/IP, Ethernet
Antenna	Internal

PCMCIA Cisco 2.4GHz Type II

Bus Interface	PCMCIA 2.0, Type II slot
Radio Frequencies	2.4 - 2.4835 GHz IEEE 802.11b DS SS
RF Data Rates	11 Mbps
RF Power Level	100 mW max.
Channels	11 US, 13 Europe, 4 France, 14 Japan
Operating Temperature	see MX5 Environmental Specs
Storage Temperature	see MX5 Environmental Specs
Connectivity	TCP/IP, Ethernet, NDSI
Antenna	Internal

Appendix C System Configuration – Pocket PC 2000

Introduction

There are several different aspects to the setup and configuration of the MX5. Many of the setup and configuration settings are dependent upon the optional features such as hardware and software installed on the unit. The examples found in this chapter are to be used *as examples only*, the configuration of your specific MX5 computer may vary. The following sections provide a general reference for the configuration of the MX5 and some of it's optional features.

Note: When a new battery is installed in the MX5 for the first time (or when the Backup battery is completely depleted), the Time and Date must be re-set.

Windows for Pocket PC

For general use instruction, please refer to commercially availableWindows for Pocket PC 2000 user's guides or the Windows for Pocket PC 2000 on-line Help application installed with the MX5.

This chapter's contents assumes the system administrator is familiar with Microsoft Windows options and capabilities loaded on most standard Pocket PC devices and/or desktop computers.

Therefore, the sections that follow describe only those Windows capabilities that are unique to the MX5 and it's Pocket PC environment.

Installed Software

Note: Some standard Pocket PC options require an internal or external modem connection. Modems are not available from LXE nor supported by LXE.

When you order an MX5 you receive the software files required by the separate programs needed for operation and radio communication. The files are loaded by LXE and stored in subdirectories on the ATA CF card installed under the Main Battery pack.

This section lists the contents of the subdirectories and the general function of the files. Files installed in each MX5 are specific to the intended function of the MX5.

Files installed in each MX5 configured for an RF environment contain PCMCIA card radio specific drivers – the drivers for each type of radio are specific to the manufacturer (e.g. Cisco) for the radios installed in the RF environment and are not interchangeable.

If you need to set up **barcode reading parameters**, please refer to the "**Integrated Scanner Programming Guide**" on the LXE Manuals CD or the LXE website www.lxe.com.

Software Load

The software loaded on the MX5 computer consists of Windows for Pocket PC 2000, hardware-specific OEM Adaptation Layer, device drivers, MS Pocket Internet Explorer browser and utilities.

The radio drivers are stored on the compact flash card that is located behind the main battery. During the cold boot process, the JmpStart program accesses the compact flash card and loads the radio drivers and any saved parameters.

The software supported by the MX5 is summarized below:

Operating System

- Pocket PC 2000.

Radio Drivers

- Only one radio is installed in the MX5 at any one time. The 2.4GHz type of PC radio card resident on the MX5 determines the type of radio driver running on the MX5.

Scanner Driver

LXE API

When updating CAB files, first delete the `RegTemp.reg` registry backup file, then perform a cold boot. `JmpStart.old` will install the drivers listed in it's script. Configure the driver settings and then create `RegSave` to save the registry contents. Then warm boot to load the drivers.

When adding new (additional) CAB files, perform the same step shown above, except edit `JmpStart.old` to add the name of the new CAB(s).

Note: Please contact your LXE representative to get access to CAB files as they are released by LXE.

The Start Menu

For general use instruction, please refer to commercially available Pocket PC 2000 user's guides or the on-line Help application installed with the MX5.

The MX5 Start menu appearance is similar to that of a hand held Palm organizer. The default bootup screen is **Today**.

Tap the Windows icon to display the Start menu. The Start menu is separated into sections:

- **Start menu** displaying Quick Start Applications
- **Programs**, which are Application specific e.g. Word, Inbox, etc.
- **Settings** which are split into Personal, System and Connection segments.
- **Find** capability
- **Help**

Factory Default Settings		
Option	*Active*	*Same as Desktop*
Today	Yes	Yes
Calendar	Yes	Yes
Contacts	Yes	Yes
Inbox	Yes	Yes
Internet Explorer	Yes	Yes
Notes	Yes	Yes
Tasks	Yes	Yes
Windows Media	Yes	Yes

Edit Start Menu Item List

Tap the Windows icon | **Settings** | **Personal** | **Menus** and select the applications to be displayed as Quick Start Applications in the Start Menu.

Inbox

This start menu option requires a connection to a mail server. There are few changes in the Pocket PC version of Inbox as it relates to the general desktop Windows PC Microsoft Outlook Inbox options. Tap the Windows icon | **Help** to access Inbox Help. ActiveSync® can be used to transfer messages between the MX5 inbox and a desktop PC inbox.

Programs Options

Access: **the Windows icon | Programs**

Help is always available at any stage – tap the Windows icon | **Help** for context-sensitive help. Tap OK to close Help and return to the program or application.

The following applications do not have context-sensitive Help available:

- ORiNOCO Client
- Cisco Client
- Scanner Control
- Handheld

Games

Access: **the Windows icon | Programs | Games**

Tap the game name icon to start a game. Tap OK to close the Games window and return to the Programs window.

Calculator

Access: **the Windows icon | Programs | Calculator**

Exit the Calculator program by tapping the Windows icon.

Cisco Client

Access: **the Windows icon | Programs | Cisco**

Note: Online help is not available for this option.

Tap OK to return to the Programs options.

Aironet Client Utility

Factory Default Settings		Other Options
SSID	Blank	
Client Name	Blank	
Infrastructure Mode	Yes	No
Power Save Mode	Fast PSP	CAM, PSP
WEP	Disabled	Enabled
Authentication Types	Open	Shared Key
LEAP	Disabled	Enabled
Mixed Mode	Disabled	Enabled
World Mode	Disabled	Enabled
Data Rates	Auto	1, 2, 5.5, 11 Mb Only
Transmit Power	MAX	20mw, 50mw, 100mw

SSID

Identifies the 802.11B wireless network the station will connect to. It can be up to 32 characters long. The SSID is case sensitive.

Default: ""

Note: Setting this value to "" will enable the station to connect to any IEEE 802.11b network.

Client Name

This is the station name that is displayed in the table of connected devices on the Access Point. It provides a logical name of up to 16 characters. Client Name is not case sensitive.

Default: ""

Infrastructure Mode

Setting this parameter to 'Yes' allows the client to set up a connection to a wired network. Setting this parameter to "No" allows the client to set up an Ad Hoc or temporary network connection between two or more computers.

Valid: Yes, No
Default: Yes

PowerSaveMode

Select Constant Awake Mode (CAM) for devices where constant availability is desired e.g. desktop computers where power saving is not an issue.

Select Fast PSP when using battery power only. Fast PSP causes the Access Point to buffer incoming messages. Fast PSP will temporarily switch to CAM mode to receive the packets and once the packets are retrieved, it switches back to PSP mode.

Valid: CAM, Fast PSP
Default: CAM

WEP

The WEP key is a 40 or 128 bit value that is used to encrypt the data portion of packets. The WEP keys are configured using the Cisco Client Encryption Manager.

```
Valid:      Enabled, Disabled
Default:    Disabled
```

Authentication Types

This parameter controls the validation of the WEP key.

```
Valid:      Open, Shared Key
Default:    Open
```

LEAP

Used to set LEAP (Light Extensible Authentication Protocol) authentication on LXE computers equipped with Cisco 350 series radios. Setting this parameter to Enabled automatically enables WEP and sets the Authentication Type to Open.

```
Valid:      Disabled, Enabled
Default:    Disabled
```

Mixed Mode

This parameter indicates if the radio card is allowed to connect to an Access Point that allows both WEP and non-WEP associations. The setting on the MX5 must match the setting on the Access Point before successful connection can occur.

```
Valid:      Disabled, Enabled
Default:    Disabled
```

WorldMode

Allows the radio card to adopt the maximum transmit power level and frequency range of the Access Point to which it is associated (available only in infrastructure mode).

```
Valid:      Disabled, Enabled
Default:    Disabled
```

Data Rates

Set this value for transmission/receive rates for packets.

```
Valid:      Auto, 1, 2, 5.5, 11Mb Only
Default:    Auto
```

Transmit Power

This parameter determines the power level the radio card uses to transmit. Choosing MAX allows the radio to transmit at the maximum power level supported by the country's regulatory agency.

```
Valid:      MAX, 20mw, 50mw, 100mw
Default:    MAX
```

Cisco Link Status

Immediately runs status on : signal strength, signal quality and overall link quality.

Client Encryption Manager

Enter the password to set encryption codes. Default password is “Cisco”. The password is case sensitive.

Client Statistics Utility

Immediately runs statistics, cumulative. An option is available to forward statistics from the client.

Load New Firmware

The current firmware version number is displayed. An option is available to load different firmware if supplied by the user.

Site Survey Tool

Immediately runs signal strength and quality and link speed. An option is available to Setup parameters for Active Mode reporting.

Wireless Login Module

LEAP must be enabled before this option can be edited or viewed.

Connections

Access: the Windows icon | Programs | Connections

When finished, Tap OK to close the folder. Tap the Windows icon | **Help** for context-sensitive help.

ActiveSync

Once a relationship has been established, ActiveSync will synchronize using the USB port, serial ports, or the infrared port on the MX5. Tap the Windows icon | **Help** for context-sensitive help.

Note: ActiveSync does not transmit through the IR port in cradles.

IR ActiveSync

Tapping this menu option begins a connection to the host. If no connection is made, the program closes.

File Explorer

Access: **the Windows icon | Programs | File Explorer**

Factory Default Settings	
Business Folder	Yes
Personal Folder	Yes
Templates	Yes

There are few changes in the Pocket PC version of Windows Explorer as it relates to the general desktop PC Windows Explorer options. Tap the Windows icon | **Help** to access File Explorer Help. Press the Windows icon to return to the Start menu.

Infrared Receive

Access: **the Windows icon | Programs | Infrared Receive**

Tapping this menu icon begins a connection to a sending device. If no connection is made, the program waits for a tap on the "Close" button.

Internet Explorer

Access: **the Windows icon | Programs | Internet Explorer**

This option requires a radio card and an Internet Service Provider. There are few changes in the Pocket PC version of Internet Explorer as it relates to the general desktop Windows PC Internet Explorer options. Tap the Windows icon | **Help** for context-sensitive help..

Microsoft Money

Access: **the Windows icon | Programs | Microsoft Money**

There are few changes in the Pocket PC E version of Microsoft Money as it relates to the general desktop PC Windows Microsoft Money application. Tap the Windows icon | **Help** for context-sensitive help.

Microsoft Reader

Access: **the Windows icon | Programs | Microsoft Reader**

This application is used to display electronic books on the screen of the MX5. Tap the Windows icon | **Help** for context-sensitive help.

ORiNOCO Client

Access: **the Windows icon | Programs | ORiNOCO**

Note: Online help is not available for this option.

Tools

Edit Wireless Profiles	Add / edit the configuration profiles
Version Info	Displays installed radio version levels
Load/Unload Automatically	The default is "Load Automatically." Use this option to load the radio drivers when the MX5 is rebooted.
Suspend While Connected	Do not use this option when Lucent radio is installed in the MX5.
Exit	

Advanced

Link Test	Test the link between the Access Point and the client radio.
Site Monitor	Test the link between all stations connected to the same Access Point as this MX5

Note: Start/settings/connections/network/Orinoco Network Adapter Installed – acknowledge the IP address (using DHCP, Use server assigned) by clicking OK. Then perform a warm boot to update the registry. This is important when unit has been cold booted.

Pocket Excel

Access: **the Windows icon | Programs | Pocket Excel**

There are few changes in the version of Pocket Excel as it relates to the general desktop PC Windows Microsoft Excel application. Tap the Windows icon | **Help** for context-sensitive help.

Pocket Word

Access: **the Windows icon | Programs | Pocket Word**

There are a few changes in the version of Microsoft Word as it relates to the general desktop Windows PC Microsoft Word options. PocketWord documents are saved with a .PWD extension instead of .DOC extension although they can be saved as .RTF or .DOC files on the MX5. Microsoft Word templates (.DOT files) are converted to Pocket Word templates (.PWT). Tap the Windows icon | **Help** for context-sensitive help. When ActiveSync transfers .pwd files to the desktop from the MX5, the file is converted to .doc files by ActiveSync.

Touch Calibrate

Access: **the Windows icon | Programs | Touch Calibrate**

Use this program to align the touch screen. Tap OK to close the align screen program without making changes. Tap the Windows icon | **Help** for context-sensitive help.

Settings Options

Access: **the Windows icon | Settings**

The following options represent the factory default Pocket PC installation. Your system may be different based on the software and hardware options purchased.

Help is always available at any stage – tap the Windows icon, tap Help and context-sensitive online help is displayed. Tap OK to close Help and return to the program or application.

Personal Tab

Buttons

Access: **the Windows icon | Settings | Personal tab | Buttons**

Program Buttons

Use this option to assign a program function to the program hardware buttons.

Button 1	Blue plus Up Arrow key	Button 3	Blue plus Right Arrow key
Button 2	Blue plus Down Arrow key	Button 4	Blue plus Left Arrow key

Up/Down Control

Set Delay before the first repeat and the repeat rate for the screen up / down arrow keys.

Screen Up	Orange plus Up Arrow key
Screen Down	Orange plus Down Arrow key

Input

Access: **the Windows icon | Settings | Personal tab | Input**

Factory Default Settings	
Input Method	Keyboard
Keys	Small keys
Word Completion	Suggest
Add Space after	Yes
Voice Recording	44,100 Hz
Capitalize	Yes
Scroll	Yes

Use this option to select Character Recognition or the keypad (including the virtual keyboard) when entering data.

Menus

Access: **the Windows icon | Settings | Personal tab | Menu**

Factory Default Settings	
Calendar	Yes
Contacts	Yes
Inbox	Yes
Internet Explorer	Yes
Notes	Yes
Tasks	Yes
Windows Media	Yes

Edit the default Start menu or create a new one.

Owner Information

Access: **the Windows icon | Settings | Personal tab | Owner Information**

Factory Default Settings	
Identification	Blank
Notes	Blank

There is no change from general desktop PC Owner Properties display. Enter the information and Tap the OK box to save the changes. The changes take effect immediately.

Password

Access: **the Windows icon | Settings | Personal tab | Password**

Factory Default Settings	
Password	Blank
At Power On	Disabled

Note: Once a password is assigned, and "Require password when device is turned on" is activated, each time the MX5 turns 'on', the password will need to be entered. If you forget the password, it cannot be restored without performing a cold boot on the unit (which erases all memory).

There is no change from general desktop PC Password Properties options. Enter the password, then type it again to confirm it and Tap the OK box to save the changes. The password is immediately in effect.

Sounds & Reminders

Access: the Windows icon | Settings | Personal tab | Sounds & Reminders

Factory Default Settings	
Volume	
Events	Enabled
Programs	Enabled
Notifications	Enabled
Volume	Middle of Bar
Screen Tap	Loud
Hardware Buttons	Loud
Sounds	
Scheme	WindowsCE
Reminders	
Display Message	Enabled
Play Sound	Enabled

Make changes and tap OK. The changes take effect immediately.

Today

Access: the Windows icon | Settings | Personal tab | Today

Checked items appearing on the Today screen:

- Date
- Today title bar
- Owner info
- Calendar
- Inbox
- Tasks

The Move Up, Move Down and Options.. buttons are greyed out for those items that cannot be edited.

Set the timer for displaying the Today screen when the device is idle. The default is 4 hours. Tap the OK button when finished. Changes take effect immediately.

System Tab

Access: **the Windows icon | Settings | System tab**

Tap the Windows icon | **Help** at any time for context-sensitive help.

About

Access: **the Windows icon | Settings | System tab | About**

Displays important device information. There are three tabs:

Version Displays the Pocket PC version installed and the build number. Also the type of processor, memory installed, whether the expansion slot is in use and the current MX5 owner name.

Device ID The default device name used to identify the MX5 to other computers is "Pocket_PC". The description is blank. You can make changes and tap the OK button. The changes take effect immediately.

Copyrights This information may be changed when a newer version of Pocket PC is loaded.

Tap OK to close this menu option.

Align Screen

Access: **the Windows icon | Settings | System tab | Align Screen**

The screen can be aligned at any time. To start, tap the Align Screen button with the stylus.

Follow the instructions on the screen and press the Enter key (or tap the OK icon) to save the new calibration settings. You can also press the <Esc> key sequence to cancel or quit.

Backlight

Access: **the Windows icon | Settings | System tab | Backlight**

Factory Default Settings	
Timeout	2 seconds
Always Allowed	Disabled
No key/pen activity	Disabled
No key/pen activity and resume on activity	Enabled
Keyboard backlight	Enabled

Using the backlight while on battery power substantially reduces battery power.

You can check the battery status by selecting the Windows icon | **Settings** | **System tab** | **Handheld** | **Power** tab. On this screen, the timeout for *turning off the device if not used for* 3 minutes (default value) while on battery power, can be adjusted. The factory default setting for this parameter is Enabled.

Clock

Access: the Windows icon | Settings | System tab | Clock

Factory Default Settings	
Time	
Where	Home
Visiting	Paris
Default city	Atlanta, GA
Time Zone	GMT-5
Time	Current
Date	Current
Alarms	
Four alarm settings	Disabled

Handheld

Access: the Windows icon | Settings | System tab | Handheld

Note: Online help is not available for this option.

Power

Factory Default Settings	
Turn off if not used for	Enabled
Timer	3 minutes

Communications

Factory Default Settings	
Port 1	
Main Connector	Enabled
Options Bay	Disabled
Power Output	Enabled
Port 2	
Main Connector	Disabled
Options Bay	Enabled
Power Output	Disabled

Versions

This screen is populated with the following information:

- Util Applet Version
- CPU
- CPU Version
- Controller Version
- CPLD Version
- Platform Version
- Serial Number

Battery Info

This screen is populated with the following information:

- Smart Battery
- Serial Number
- Date of Manufacture
- Chemistry
- Maximum Capacity
- Charge Cycles
- Gas Gauge
- E2PROM
- Charging
- Temperature
- Voltage
- Current

Keyboard

Although the default keyboard layout is Standard, this parameter must be changed to Alphanumeric for the LXE MX5.

This value may also need to be reset after a Cold Boot.

Factory Default Settings	
Keyboard Layout	Standard

Memory

Access: the Windows icon | Settings | System tab | Memory

Tap the Windows icon | **Help** at any time for context-sensitive help.

Factory Default Settings	
Main	
Total main memory	63.18 MB
Storage setting	50% of available memory
Program setting	50% of available memory
Storage Card	
Not installed	
Running Program List	
File Explorer	Enabled

If a program becomes unstable or stops running, use the Running Program List to highlight the program name, the select Activate, Stop or Stop all programs.

Tap OK to close the menu.

Regional Settings

Access: the Windows icon | Settings | System tab | Regional Settings

No change from general desktop PC Regional Settings Properties options. Adjust the settings and tap the OK box to save the changes. The changes take effect immediately.

Factory Default Settings	
Regional Setting	English (United States)
Number	123,456,789.00 / -123,456,789.00 neg
Currency	$123,456,789.00 pos / ($123,456,789.00) neg
Time	h:mm:ss tt (tt=AM or PM)
Date	M/d/yy short / dddd,MMMM,dd,yyyy long

Remove Programs

Access: the Windows icon | Settings | System tab | Remove Programs

Tap the name of the program, then tap Remove. Tap OK to close this option. Changes take place immediately.

User installed device drivers, when removed, require a cold boot to completely remove the program.

Scanner

Note: Online help is not available for this option.

Access: the Windows icon | Settings | System tab | Scanner

The Keys may need to be set to Scan if there is an integrated scanner in the MX5.

Factory Default Settings	
Main	
Port 1	Disabled
Port 2	Disabled
Send key messages WEDGE	Enabled
Keys	
Left	Enter
Right	Enter
COM Ports (COM1 and COM4)	
Baud Rate	9600
Parity	None
Stop Bits	1
Data Bits	8

Note: If the internal scanner has to be configured to operate at any communication settings other than 9600, N, 8, 1 and the computer either loses power or a cold boot command is entered, the Scanner applet must be reconfigured to match the scanner communication settings.

Note: ActiveSync will not work over the COM1 port if COM1 external is enabled in the Scanner applet as a scanner input.

Tap OK to close this menu option. Tap X to cancel changes. Any changes made are in effect immediately.

Wireless Network

Access: the Windows icon | Settings | System tab | Wireless Network

Use this option to activate a wireless profile from the pull-down menu. Add, edit or delete a user-defined wireless profile.

Factory Default Settings	
Profile	"default"
Network type	Access Point
Network name	Blank
Enable Data Security	Disabled
Card Power Management	Off
Keys	
Left	Enter
Right	Enter

Tap OK to close this menu option. Any changes made are in effect immediately.

Connections Tab

Tap the Windows icon | **Help** at any time for context-sensitive help.

AvantGo Connect

Access: the Windows icon | Settings | Connections tab | AvantGo Connect

Factory Default Settings	
Server AvantGo.com (sync.avantgo.com:80)	
Hostname	Sync.avantgo.com
Port	80
Username	Blank
Password	Blank
Connection Options	
Connect to this server	Enabled
Refresh all content at next sync	Enabled
Connect securely	Disabled

Use this option to assign server settings and synchronize with all servers using AvantGo. Tap OK to close this menu option. Any changes made are in effect immediately.

Modem

Note: Some standard Pocket PC options require an internal or external modem connection. Modems are not available from LXE nor supported by LXE.

Access: the Windows icon | Settings | Connections tab | Modem

Connections

Access: the Windows icon | Settings | Connections tab | Modem | Connections tab

Factory Default Settings	
New Connection	
Name	My Connection
Modem	Hayes Compatible on Com 1
Baud rate	19200
Country Code	1
Area Code	425
Phone Number	Blank
Cancel call if not connected	Enabled
Wait for dial tone	Enabled
Advanced	
Port Settings	
Connection preferences	8, None, 1, Hardware
Terminal settings	Disabled
Connect securely	Disabled
TCP/IP	
Use server assigned IP address	Enabled

Factory Default Settings	
Use Slip	Disabled
Software compression	Enabled
IP header compression	Enabled
Name Servers	
Use server assigned IP address	Enabled
Use specific server address	Disabled
Terminal settings	Disabled
Connect securely	Disabled

Tap OK to close this menu option. Any changes made are in effect immediately.

Dialing

Access: the Windows icon | Settings | Connections tab | Modem | Dialing tab

Factory Default Settings	
Location	Work
Local Settings	
Area Code	425
Country code	1
Dialing Patterns	
Local calls	9,G
Long distance	9,1FG
International	9,011,EFG

Tap OK to close this menu option. Any changes made are in effect immediately.

Network

Access: the Windows icon | Settings | Connections tab | Network

Tap an adapter to view or change the properties.

Factory Default SettingsError! Bookmark not defined.	
NE2000 Compatible Ethernet Driver	
Use server-assigned IP address	Default
Country code	1
Dialing Patterns	
Local calls	9,G
Long distance	9,1FG
International	9,011,EFG

Tap OK to close this menu option. Any changes made are in effect immediately.

PC

Access: the Windows icon | Settings | Connections tab | PC

Factory Default Settings	
Automatically synchronize via serial cable	Enabled
Baud rate	57600

Baud rate options are 115200, 19200, 38400, 57600, and USB. To synchronize through the IR port, use the Connections menu option instead.

Tap OK to close this menu option. Any changes made are in effect immediately.

Find

Access: the Windows icon | Find

There are few changes in the Pocket PC version of the Windows Find program as it relates to the general desktop PC Windows Find function. Tap the Windows icon | **Help** to access context-specific help.

Help

Access: the Windows icon | Help

There are few changes in the Pocket PC version of the Windows Help program as it relates to the general desktop PC Windows Help program. Tap OK to close Help.

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